National Energy Board

Office national de l'énergie

annual report 2002

to Parliament

103-03966/

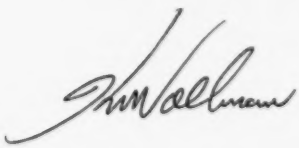
14 March 2003

The Honourable Herb Dhaliwal, P.C., M.P.
Minister of Natural Resources Canada
580 Booth Street, 21st Floor
Ottawa, Ontario
K1A 0E4

Dear Minister:

I am pleased to submit the Annual Report of the National Energy Board for the year ending 31 December 2002, in accordance with the provisions of Section 133 of the *National Energy Board Act*, R.S.C. 1985, c. N-7.

Yours truly,



Kenneth W. Vollman
Chairman

table of contents

Chairman's Letter 1

Our Role and Responsibilities 3

Operating Context 5

Regulatory Highlights 9

Energy Overview 14

Safety and Environment 29

Economic Efficiency 36

Public Engagement 42

A Wealth of Experience 48

Supplement

- I Acts, Regulations and Guidelines 52
- II Companies Regulated by the NEB 56
- III Documents 59
- IV Legal Proceedings 61
- V Co-operation with Other Organizations 65
- VI List of Appendices 69
- VII NEB Organization 71
- VIII List of Abbrevations 74

Metric Conversion Table 75

our purpose

We promote safety, environmental protection, and economic efficiency in the Canadian public interest while respecting individuals' rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

our vision

To be a respected leader in safety, environmental and economic regulation.

our goals

NEB-regulated facilities are safe and perceived to be safe.

NEB-regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

Canadians derive the benefits of economic efficiency.

The NEB meets the evolving needs of the public to engage in NEB matters.

chairman's letter

The price volatility observed in natural gas markets in 2001, along with the serious difficulties experienced by North American energy trading companies, raised public concern about the functioning of energy markets. In response, the NEB monitored markets closely in 2002 and concluded that Canadians' energy needs were fully satisfied throughout the year at fair market prices. Importantly, the Board did not find any evidence of questionable energy trading practices in Canada.

In keeping with our monitoring activities, the Board released a report on the functioning of the Canadian natural gas market and another on the outlook for natural gas supply capability of the Western Canada Sedimentary Basin (WCSB). These reports indicate that it is likely that, even with high drilling levels, production of conventional natural gas supplies will remain flat or decline slightly over the next couple of years. The maturing of the WCSB is leading to a heightened level of interest in the development of other sources of gas supply, including coal bed methane and new basins in the Northwest Territories and offshore Nova Scotia.

Development of resources in frontier areas requires companies to seek approvals from several jurisdictions and agencies with a variety of mandates. The NEB worked closely with 12 boards and agencies with jurisdiction in the North to establish the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories*. The Board also partnered with the Canada-Nova Scotia Offshore Petroleum Board to arrange for a single-window review of the proposed Deep Panuke Offshore Gas Development project in the Scotian basin. The Board will work with all federal, provincial and regional agencies to continue to improve the effectiveness and efficiency of its regulatory approval processes.

The Board is committed to the concept of "smart regulation", which means dedicating its resources to issues that are in the public interest of Canadians, while streamlining regulatory processes. One example of smart regulation that the Board has pursued is the goal-oriented approach to regulation. The Board has also excluded an increased number of routine projects from its application process and is currently revising and clarifying the guidelines relied upon by companies in preparing applications to the Board.

During 2002, the Board continued to focus on outcomes related to its environmental regulation program. We are now able to rigorously assess the effectiveness of the environmental conditions we attach to facility approvals. In 2002, 94 percent of the conditions for which a result was available had attained their desired end result of contributing to the goal of environmental protection.

The Board has also worked to ensure that it meets the needs of the Canadian public to engage in NEB matters. In 2002, several new initiatives designed to facilitate the engagement of stakeholders in Board processes were implemented, including: extensive external consultations on the upcoming Supply and Demand Report; further understanding of effective Aboriginal Engagement; and the gradual implementation of an Appropriate Dispute Resolution program.

I believe that the Board achieved its goals in 2002: Canadian pipelines were constructed and operated safely and in a manner that protected the environment; energy markets worked fairly to the economic benefit of Canadians; the pipeline infrastructure met the needs of producers, shippers and consumers; and a large number of Canadians participated effectively in Board matters. It is with pride in the results that we have achieved and confidence that the Board will continue to meet its goals that I submit this report.

Kenneth W. Vollman

our role and responsibilities

The National Energy Board (NEB or Board) is an independent regulatory tribunal established in 1959. It reports to Parliament through the Minister of Natural Resources. The main functions of the NEB are established in the *National Energy Board Act* (NEB Act). These include the regulation of interprovincial and international natural gas, oil and commodity pipelines, international and designated interprovincial electric power lines, and energy exports. The Board has additional regulatory responsibilities under the *Canada Oil and Gas Operations Act* (COGO Act) and under certain provisions of the *Canada Petroleum Resources Act* (CPR Act) for oil and gas exploration and activities on frontier lands not otherwise regulated under joint federal/provincial accords. The Board also has specific responsibilities under the *Northern Pipeline Act* and the *Energy Administration Act*.

The NEB's regulatory responsibilities for public safety and protection of the environment are set out in the NEB Act and the COGO Act. The NEB is required to meet the requirements of the *Canadian Environmental Assessment Act* (CEA Act) and the *Mackenzie Valley Resource Management Act*. In addition, Board inspectors are appointed Health and Safety officers by the Minister of Labour to administer Part II of the *Canada Labour Code* as it applies to facilities regulated by the Board.

The Board's mandate also includes the provision of expert technical advice to the Canada-Newfoundland Offshore Petroleum Board (C-NOPB), the Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB), Natural Resources Canada (NRCan) and Indian and Northern Affairs Canada (INAC). The Board may, on its own initiative, hold inquiries and conduct studies on specific energy matters as well as prepare reports for Parliament, the federal government and the general public. The NEB Act requires that the Board keep under review matters relating to all aspects of energy supply, production, development and trade that fall within the jurisdiction of the federal government. In addition, the Board provides advice and carries out studies and reports at the request of the Minister of Natural Resources.

The Board is a court of record and has the powers of a superior court with regard to compelling attendance at hearings, the examination of witnesses under oath, the production and inspection of documents, and the enforcement of its orders. The NEB Act provides for up to nine permanent

The NEB's corporate purpose is to promote safety, environmental protection and economic efficiency in the Canadian public interest while respecting individuals' rights and within the mandate set by Parliament in the regulation of pipelines, energy development and trade.

The NEB's vision is to be a respected leader in safety, environmental and economic regulation.

1 The public interest is inclusive of all Canadians and refers to a balance of economic, environmental, and social interests that changes as society's values and preferences evolve over time. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts, and make a decision.

Board Members. Public hearings are typically conducted by three Members, who constitute a quorum of the Board, with one acting as Presiding Member. The Board's regulatory decisions and the reasons for them are issued as public documents.

Additional information on the background and operations of the NEB may be found at the Board's Internet site, www.neb-one.gc.ca.

operating context

The NEB's business is the provision of energy regulation, decisions and advice. Companies regulated by the Board create wealth for Canadians through the transport of oil, natural gas and natural gas liquids (NGLs), and through the export of hydrocarbons and electricity. As a regulatory agency, the Board's role is to help create a framework that allows these economic activities to occur when they are in the public interest. Through its corporate goals, the Board strives to ensure public safety, maximize economic benefits, protect the environment and respect the rights of those affected by energy facilities and activities under the Board's jurisdiction. As a regulator, the Board must estimate the overall public good a project may create and its potential negative aspects, weigh its various impacts and make a decision.

The Board is aware of the influence it has on the investment climate for energy companies. Industry desires clear regulatory processes with predictable timelines. At the same time, the public needs to know that pipelines and other regulated facilities found to be in the public interest are built and operated in a safe and environmentally responsible manner. The Board is committed to adjusting its regulatory approaches to meet the needs of Canadians.

Oil, natural gas and electricity are Canada's major energy commodities, and while convergence between energy forms is continuing, each commodity has its own trading characteristics. Oil is traded on an open world market; therefore, prices paid to producers and by consumers are tied to world oil market trends. Canadian natural gas trades in a highly integrated North American market, where developments in one geographic area inevitably affect the entire market. Finally, electric power markets still tend to be regional, although the restructuring of power markets in various jurisdictions in Canada and the United States is ongoing.

This report is written within the context of each of these energy commodities and the Board's role in the regulation of pipelines, energy development and trade.

Energy Markets

The year 2002 was marked by the return of relative stability in natural gas prices, heightened tension in world oil markets and increased interest in electricity exports.

Natural gas prices averaged $3.70[1] per gigajoule during 2002, fluctuating between $3.00 and $4.00 for most of the year. On a net export basis, Canada exported about 16 percent of its natural gas production to the United States in 2002, and these exports make up an important component of U.S. supply. Canadian production from the Western Canada Sedimentary Basin

1 Canadian currency is used unless otherwise specified.

(WCSB) and the Scotian Shelf accounts for nearly 25 percent of total North American supply. While Canada's supply basins are less explored than those in the United States, the increasing maturity of the WCSB was an issue of concern in 2002. Some three billion cubic feet per day of productive capacity must be added each year just to maintain current levels of production. This may in part explain the heightened level of interest in both the proposed Mackenzie Valley gas pipeline and exploration and development of the Canadian East Coast offshore area. There was also renewed interest in expanding the connection to international gas markets by importing liquefied natural gas, though import levels into North America remained limited. In addition, North American gas markets were affected by the collapse of energy marketing giant Enron, and by the ongoing investigations into alleged corporate misconduct at a number of other energy trading firms. The net result has been a loss of liquidity, as overall short-term trading has been sharply reduced.

The average world oil price, at US$26 for West Texas Intermediate (WTI), was up only slightly compared with 2001. However, over the course of 2002, prices increased from the US$20 level to US$32, primarily due to international political tensions that threatened to disrupt global supplies of crude oil. Low inventory levels in the three OECD[1] markets also supported relatively high prices. Canadian oil producers benefited from high and stable prices with Canadian production of crude oil and equivalent establishing a record high in 2002. After declining for four consecutive quarters, the rate of growth in world oil demand rebounded strongly in the third quarter of 2002, with growth expected to continue during the winter. Canada's oil production and export levels continue to increase, with the United States importing most Canadian exports. In this regard, oil exports are closely tied to the demand characteristics of the U.S. market, particularly the U.S. Midwest region.

Since the early 1990s, major initiatives have been undertaken to restructure electricity markets in North America. The restructuring of power markets in various jurisdictions in Canada and the United States is ongoing, and although the degree of interconnection is increasing, power markets still tend to be regional. At the end of 2002, both Alberta and Ontario were offering wholesale and retail competition. As a result, about 50 percent of the Canadian population have wholesale and retail access to electricity. Nova Scotia, New Brunswick and British Columbia have all announced specific initiatives toward restructuring the electricity markets in their provinces.

The Board continues to participate in the "Trilateral Clearing House," an initiative of the Trilateral Electricity Group of the North American Energy Working Group (NAEWG). The goals of the NAEWG are to foster communication and co-operation among the governments and energy sectors in Canada, the United States and Mexico on energy-related matters of common interest and to enhance North American trade and interconnections consistent with the goal of sustainable development.

Smart Regulation

Smart regulation was one of the key themes in the 2002 *Speech from the Throne*. Smart regulation creates a positive investment climate by creating a clear, predictable and efficient regulatory

1 Organization for Economic Co-operation and Development.

process. The Board realizes that companies need clear regulatory requirements and dependable timelines. The NEB has been taking concrete actions in this area by developing new approaches to how it regulates, while ensuring that all relevant public interests are considered.

The Board believes that the move from prescriptive to goal-oriented regulation is a key component of smart regulation and will continue to pursue efforts to implement the goal-oriented approach. In this approach, the regulations identify the goals that must be attained by the regulated companies, with the companies selecting the best methods to achieve the goals. The Board's first step towards goal-oriented regulation occurred when it issued the revised *Onshore Pipeline Regulations* in 1999. Since then, using the goal-oriented approach, the Board has proposed the *Processing Plant Regulations* (proceeding with promulgation), the *Damage Prevention Regulations* (currently under review), and revisions to the *Diving Regulations* (waiting for Offshore Board approvals).

The Board continuously reviews its processes for efficiency, focussing regulatory approval efforts where they can have the most impact and by streamlining processes wherever possible. In 2002, the Board issued a revised *Section 58 Streamlining Order*, which permits companies to undertake, without applying for Board approval, certain routine facilities projects. The revisions resulted in the exclusion of an increased number of routine projects from the Board's application process.

As incomplete applications are one of the major causes of unnecessarily long processing times, the Board embarked upon a review of its *Guidelines for Filing Requirements* (GFR) in 2002. The GFR identify the information that must be filed with applications to the Board. The first completed sections of the revised guidelines will be released in the spring of 2003, with the entire review scheduled for completion by the end of 2003.

In order to minimize duplication, the Board looks for ways to coordinate processes with other regulators and government departments. In 2002, the Board played a leadership role in discussions that resulted in a cooperation plan among 12 organizations for the review of a Mackenzie Valley Pipeline application. The Board also negotiated an agreement with the C-NSOPB for a one-window review of EnCana's Deep Panuke Offshore Gas Development project.

Further information on these initiatives may be found in the Economic Efficiency section of this report.

Public Content

In rendering its decisions, the Board strives to make decisions that are in the Canadian public interest. Board processes are designed to allow for interested parties to express their views. It is important that all views are heard as the Board's regulatory decisions affect industry, energy consumers, landowners, Aboriginal peoples, and those who live in the vicinity of a pipeline, powerline or facility.

The Board engages other government agencies when applications involve multiple jurisdictions in order to minimize duplication, clarify processes and facilitate public participation. In 2002, the Board undertook several initiatives to enhance the public's understanding of its regulatory processes. One example is the Board's development of an Appropriate Dispute Resolution (ADR) program to allow greater flexibility in resolving issues either within or outside the traditional regulatory process. In another example, that builds on work that began in 2001, the Board, in consultation with several other regulatory authorities, completed the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories* (June 2002). The NEB is committed to engaging the various stakeholder groups and to working in a collaborative manner with other regulatory agencies to ensure that energy projects only proceed once all of the relevant public interests are considered.

Pipeline Security

The NEB maintains regular communications with the major NEB-regulated pipeline companies regarding security of their operations and pipeline systems. The NEB found that companies increased the level of security at their facilities during 2002. In addition to an overall heightened level of awareness, companies have implemented several security loss-prevention initiatives. These include restricting access to sensitive areas, reviewing or re-establishing existing security procedures, performing security audits, and enhancing physical security. There was also a general trend for companies to focus on employee training, emphasizing security issues and enhanced liaison with first responders, government and industry associations. The NEB also communicated to regulated companies that security issues should be included as part of their emergency response and preparedness programs. In addition, the NEB maintains communications and working relationships with the following organizations on security issues: the Office of Critical Infrastructure Protection and Emergency Preparedness, the Alberta Energy and Utilities Board (EUB), the Royal Canadian Mounted Police, the Transportation Safety Board of Canada (TSB), the Canadian Association of Petroleum Producers (CAPP), the Canadian Energy Pipeline Association, and the U.S. Office of Pipeline Safety.

regulatory highlights

In 2002, the Board considered applications for new pipeline facilities, new international power lines, tolls and tariffs filings, requests for changes to short-term export orders and a request for review of a previous decision. The Board received more than 730 applications from regulated companies, an increase of 25 percent over the previous year. The majority of these applications did not require a public hearing and included requests for routine improvements to the operation of existing regulated facilities as well as requests for short-term export orders. Seven public hearings were held in 2002, with a total of 57 hearing days. In addition, the Board received 96 applications under the COGO Act related to exploration and production activity in frontier areas, compared with 63 in 2001. The Board also investigated 38 complaints from landowners, compared with 43 in 2001. Approvals granted under the NEB Act included:

- 3 Certificates of Public Convenience and Necessity;
- 178 orders and permits for the construction and operation of pipelines and power lines under Part III of the NEB Act;
- 15 orders related to pipeline tolls and tariffs under Part IV of the NEB Act; and
- 548 permits and orders to export natural gas, crude oil and electricity under Part VI of the NEB Act.

Appendices B, C and E contain complete lists of regulatory decisions issued in 2002.

Pipeline Facilities

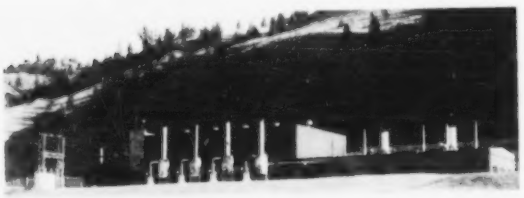
The majority of approvals for pipeline facilities granted by the Board were for routine improvements to existing regulated facilities. Although the NEB did not receive any applications for major increases in pipeline capacity out of Alberta, the Board saw a shift in applications for proposed natural gas facilities in northeastern British Columbia as well as the Maritime offshore area.

In March 2002, EnCana Corporation, formerly PanCanadian Energy Corporation, filed applications with the C-NSOPB and the NEB for its Deep Panuke Offshore Gas Development project. A memorandum of understanding between the NEB and the C-NSOPB was developed in order to co-ordinate the public review of the project, reduce duplication and facilitate public participation. The public hearing is scheduled to begin in the spring of 2003.

The Board received an application from Maritimes & Northeast Pipeline Ltd. (M&NP) to expand capacity of its system by constructing a meter station and two compressor stations in Nova Scotia and two compressor stations in New Brunswick. The project was approved in

November 2002. The approval will come into effect on the later of 31 July 2003 or when M&NP submits certain required filings, including the filing of a revised engineering/hydraulic design for the facilities should contract volumes be less than anticipated.

In November 2002, the Board approved an application by Westcoast Energy Inc. (Westcoast) to expand the Grizzly Raw Gas Transmission System and to construct the Weejay Lateral. The project will consist of 109.5 kilometres of 406 mm[1] pipeline and five kilometres of 273 mm pipeline. It will permit Westcoast to connect additional gas reserves in the Ojay/Weejay area of British Columbia and the Narraway area of Alberta for delivery and treatment at its Pine River gas plant.



In another Westcoast application, the Board approved the company's Kwoen facilities, which consist of a compressor unit, an acid gas stripper, and a ten kilometre re-injection pipeline connecting to a disposal well. These facilities, located in northeastern British Columbia, will process part of the raw gas transported by the Grizzly Transmission System. In addition, the Board considered an application for an expansion to Westcoast's Southern Mainline natural gas pipeline system in British Columbia. The proposed facilities would consist of approximately 54.6 kilometres of 1067 mm natural gas pipeline in six loop segments along the existing mainline, and additional facilities at several compressor and meter stations. A decision on the proposed Southern Mainline project is expected in early 2003.

The Board continued work on the Georgia Strait Crossing Pipeline Project (GSX), which involves construction and operation of the Canadian portion of a proposed pipeline that would transport natural gas from Sumas, Washington to Vancouver Island. The Joint Review Panel considering the application conducted a public hearing on a motion regarding the environmental effects of the project. A pre-hearing conference was also held in order to discuss the technical and scientific issues related to the marine portion of the project. The public hearing on GSX is scheduled to begin in February 2003.

Tolls and Tariffs Matters

With respect to tolling matters, there was one public hearing and a technical conference in 2002, both of which dealt with applications from TransCanada PipeLines Limited (TransCanada).

In February 2002, the Board convened a public hearing on all matters related to TransCanada's cost of capital and establishing a fair return for the years 2001 and 2002. In its decision, the Board denied TransCanada's application to establish the company's fair return by using a new approach, after tax weighted average cost of capital, and affirmed the use of the formula established in the multi-pipeline cost of capital proceeding (RH-2-94). However, the Board did approve an increase in the equity component of TransCanada's capital structure. In late 2002, TransCanada applied for a review and variance of this decision.

1 The Board uses the International System of Units. A metric conversion table is provided at the end of this report.

In an attempt to resolve concerns expressed by several parties, the Board held a technical conference in early 2002 to deal with matters related to an application by TransCanada for the deactivation of certain compressors. Subsequent to the conference, the Board issued guidance as to the appropriate accounting treatment for the units that were to be held for possible reuse. The technical conference was successful in resolving the immediate concerns of parties as well as providing a framework for resolving outstanding issues.

In November 2002, TransCanada applied for an order approving Interim Tolls for service on its Mainline effective 1 January 2003. Prior to making a decision, the Board sought comments from interested persons on the appropriateness of the level of the proposed Interim Tolls. The Board approved the application for Interim Tolls in December 2002.

The NEB also received an application from TransCanada for approval of tolls that it may charge for transportation services on its Mainline for the year 2003. The Board will hold a public hearing in February 2003 on this application.

Natural Gas Exports

In an application to the Board, the Province of New Brunswick requested that the Board hold a hearing to establish a set of rules that would apply when considering applications for short-term export orders for incremental supplies of Scotian offshore gas. The province was concerned that Maritime gas buyers had difficulty accessing Scotian offshore gas due to tightness of supply. In September 2002, after a public hearing on the matter, the Board denied the application, deciding that it would be inappropriate to implement new procedures that would unduly interfere with the normal operation of the market. In reaching this conclusion, the Board noted that no direct evidence was produced establishing that Maritime gas buyers had not had access to Scotian offshore gas supplies on terms and conditions similar to those offered to export customers. However, recognizing that there are a number of unique characteristics of the Maritime gas market, the Board decided that it must enhance its monitoring efforts. In December 2002, the Board began consultations with key players in the Maritime natural gas market to gather information for its first public report on the functioning of that market.

Power Line Facilities

In 2002, the Board was particularly active assessing applications for power line facilities as interest in strengthening links in the North American electric power grid continued.

In March 2002, the Board approved an application by the Manitoba Hydro Electric Board to construct and operate an international power line (IPL) between Glenboro station in Southern Manitoba and the international boundary near Killarney, Manitoba. In June 2002, the Board approved an application by Cedars Rapids Transmission Co. to reconstruct an IPL from Les Cèdres, Quebec to Cornwall, Ontario.

In April 2002, Hydro One Delivery Services, Inc. filed a preliminary information package with the Board regarding the proposed Lake Erie Link, an IPL between Canada and the United States across Lake Erie. The Board had invited public comments on a proposed scope of the environmental assessment. However, in October 2002, Hydro One requested postponement until further notice. The Board will take no further action on the project at this time.

In an application dated 31 May 2001 and later revised on 26 July 2002, New Brunswick Power Corporation (NB Power) applied to construct and operate a 345 kilovolt IPL approximately 95 kilometres in length. It would run west from the Point Lepreau Peninsula to the international boundary near Woodland, Maine. The application is expected to go to public hearing in 2003.

In June, Sumas Energy 2 Inc. (SE2) requested the Board to recommence assessment of a proposed 230 kilovolt IPL originating from Sumas, Washington and crossing the international boundary near Abbotsford, British Columbia. In October 2002, the Board held a public hearing in Abbotsford to consider motions concerning the application. The Board decided that it would consider evidence regarding the environmental effects in Canada of SE2's proposed power plant to be located at Sumas. A public hearing on SE2's application is scheduled for April 2003.

Activity in Frontier Regions

Exploration activity was primarily focused in the southern Northwest Territories (NWT) and the Mackenzie Delta/Beaufort Sea area. Geophysical and drilling programs conducted in 2002 continued at the same level as the previous year. Activity in the southern NWT near the hamlet of Fort Liard and the Central Mackenzie Valley focused on geophysical programs and exploration well drilling. In addition, offshore seismic programs were conducted in the Beaufort Sea, Davis Strait and Gulf of St. Lawrence.

In 2002, the Board continued assessing applications for frontier projects. Activity was related to the tie-in of the discovered gas reserves in the southern NWT. One new gas field, Cameron Hills, was brought on production and tied into the Cameron Hills pipeline system that serves North American markets. In addition to Cameron Hills, production operations continued from three producing gas fields near Fort Liard, the Norman Wells oil field and the Ikhil gas field, the latter supplying gas to the town of Inuvik. Also in 2002, abandonment commenced on the production facilities at the Pointed Mountain Gas Field near Fort Liard, which produced gas from 1972 to 2001. Industry groups continued feasibility and engineering studies on major natural gas pipelines from the Mackenzie Delta and Alaska. To date, no applications for pipeline construction have been made.

Regulatory Co-operation in the North

In June 2002, the chairs of boards and agencies with regulatory and environmental assessment responsibilities in the Mackenzie Valley (12 organizations in total including the NEB) jointly released the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline through the Northwest Territories* (June 2002). The plan had been released for public comment earlier in the year, and then revised based on input received from a broad cross-section of interested parties.

The plan sets out a co-ordinated process for review of a major pipeline application in a manner that reduces duplication, provides certainty and timeliness, and enhances public participation. Through the remainder of 2002, the boards and agencies worked to implement the Co-operation Plan through development of specific bilateral agreements, a project secretariat, shared technical support, a joint public registry, and a plan for public involvement. The process described in the Co-operation Plan will begin following submission of a preliminary information package by a proponent and applications to the Mackenzie Valley Land and Water Board.

Through the Regulatory Roadmaps Project, the NEB participated in the development of several new guides for the regulatory process of oil and gas exploration, development and production activities in frontier areas. Three guides were released in 2002:

- *Guide to Oil and Gas Approvals in the Gwich'in Settlement Area, NWT;*
- *Guide to Oil and Gas Approvals in the Sahtu Settlement Area, NWT; and*
- *Guide to Oil and Gas Approvals in the Beaufort Sea, NWT.*

There are now seven guides completed for the Regulatory Roadmaps Project, including two additional NWT guides and two Atlantic Canada offshore guides. They may be found electronically at www.oilandgasguides.com.

The NEB is also participating in the multi-stakeholder development of the Mackenzie Valley Environmental Impact Review Board's *Guidelines for Environmental Impact Assessment in the Mackenzie Valley, NWT.* Completion of these guidelines is expected in 2003.

energy overview

As part of its monitoring function, the Board keeps Canadians informed about trends and issues in energy markets on an ongoing basis. In addition to fulfilling its statutory reporting requirements with respect to energy exports and imports, the NEB also prepares reports on current and future energy market developments in Canada. In 2002, the Board issued two Energy Market Assessment (EMA) reports on natural gas markets and the natural gas supply capability of the WCSB. The Board has also been preparing a long-term study of Canadian energy supply and demand, which is scheduled for release in the spring of 2003. The Supply and Demand Report presents analyses of long-term trends in energy markets in Canada and is updated every three to four years.

This overview provides a summary of Canadian energy supply, consumption, production, prices, and trade over the past five years. The Appendices, prepared as a companion document to the Annual Report, provide details on supply and disposition of crude oil, natural gas and electricity, as well as on industry activity, facility certificates, orders and licences for exports and pipeline financial information (see the List of Appendices in Supplement VI).

Energy and the Canadian Economy

In 2002, the energy industry accounted for about six percent of Canada's Gross Domestic Product and employed just under 300 000 persons or about 1.8 percent of the Canadian labour force. Energy export revenue accounted for an estimated 12 percent of all Canadian exports, down from 15 percent in 2001. This decline was due to decreased commodity prices and export volumes.

Economic growth in both Canada and the United States during 2002 outpaced 2001 levels, at 3.4 percent versus 1.5 percent for Canada, and 2.7 percent versus 1.0 percent for the United States. Total Canadian energy production increased 1.9 percent in 2002 compared with 1.6 percent in 2001, supported by higher economic growth in North America (Table 1). During the 1998-2002 period, total Canadian energy production increased on average by 1.4 percent per year, reflecting the pace of growth in the North American economy as a whole.

TABLE 1
Domestic Energy Production by Energy Source

	1998	1999	2000	2001	2002(e)
Petroleum	5 627	5 420	5 671	5 727	5 830
Natural Gas	6 125	6 189	6 377	6 636	6 755
Hydroelectricity	1 183	1 232	1 278	1 182	1 263
Nuclear	780	802	795	837	808
Coal	1 651	1 589	1 516	1502	1 529
Renewable and Other	571	609	615	621	632
Total	15 937	15 841	16 252	16 505	16 817

(e) Estimate

Note: Includes energy exports

Petroleum includes crude oil and equivalent + NGL

Source: Statistics Canada, NEB

Petroleum and natural gas together accounted for approximately 75 percent of the total Canadian energy production, about the same as in 2001. Higher production of natural gas and petroleum including crude oil and NGLs are mainly the result of higher economic growth, relatively moderate changes in oil and gas prices

and expansion of facilities. Hydroelectric generation and coal production increased in 2002 from 2001 levels. Nuclear generation in 2002 declined slightly from 2001 levels.

Preliminary estimates indicate that domestic Canadian energy consumption increased by 2.5 percent in 2002, after a modest decline in 2001 (Table 2), consistent with growth in the Canadian economy and relatively moderate changes in energy prices.

On average, the Canadian economy has been using energy more efficiently. Domestic energy consumption per unit of Gross Domestic Product (i.e. energy intensity of production of goods and services) continued to decline. During the 1998-2002 period, Canadian energy consumption increased on average by 1.7 percent per year, compared with an average growth rate of 3.1 percent per year for the Canadian economy as a whole.

TABLE 2
Domestic Energy Consumption[1]

	1998	1999	2000	2001	2002[2]
Space Heating	1 868	1 936	2 040	1 890	2 001
Transportation	2 257	2 307	2 280	2 256	2 271
Other Uses	3 403	3 516	3 726	3 425	3 552
Non-Energy[3]	812	829	789	856	866
Electricity Generation[4]	2 185	2 225	2 186	2 531	2 552
Total	10 525	10 813	11 021	10 958	11 242

In 2002, the gross export earnings from natural gas, petroleum, electricity and coal were approximately $43 billion, about 18 percent lower relative to 2001, mainly due to lower natural gas and NGL export prices. In 2002, Canada's energy trade surplus (value of energy exports minus value of energy imports) was about $26 billion, down from $33 billion in 2001.

Crude oil and Natural Gas Liquids

International Markets

After declining to the US$20 level at the end of 2001, world oil prices rose during 2002 under the influence of rising geopolitical tensions that threatened to disrupt global supplies of crude. Fears that the United States would invade Iraq were eased somewhat when Iraq complied with a United Nations resolution to allow weapons inspectors into the country. In December, however, tensions escalated following mounting doubts whether Iraq would comply fully with the United Nations resolution. Also, a general strike that was called in Venezuela in early December, and that was still ongoing at year-end, severely reduced its oil exports. The price of WTI ended the year at about US$32, and averaged US$26 for the year.

FIGURE 1
Net Energy Export Revenues

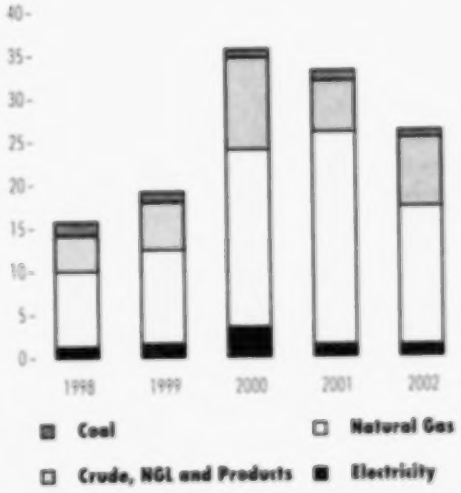
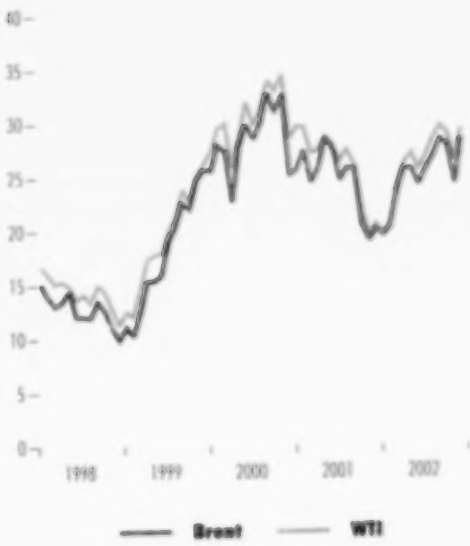


FIGURE 2
WTI and Brent Oil Price



Effective 1 January 2002, the Organization of Petroleum Exporting Countries (OPEC) reduced its production quotas to 3.4 million cubic metres per day, the lowest level in ten years. These quotas remained in place until late in the year. The market did, however, receive additional supply from OPEC as a result of its members producing above quota during the fourth quarter, at times by up to 476 000 cubic metres per day. At its meeting in December 2002, OPEC decided to increase its quotas by 296 000 cubic metres per day effective 1 January 2003 and to adhere to the new output levels.

Production and Reserves Replacement

Canadian production of crude oil and equivalent again established a record in 2002, with production estimated at an average of 370 400 cubic metres per day, up by six percent from 2001 levels. This growth reflects increases in synthetic and bitumen production from Western Canada and an increase in conventional light crude oil production from Eastern Canada (Table 3).

Production in offshore Newfoundland and Labrador nearly doubled in 2002, to 45 000 cubic metres per day, with the start-up of the Terra Nova field complementing the ongoing operations at Hibernia, where production increased by 18 percent over the previous year. In Western Canada, crude oil and equivalent supply increased by about 6.8 percent in 2002. Conventional light crude oil production declined by 5.2 percent, continuing a long-term trend reflecting the natural decline of the reservoirs. Conventional heavy crude oil production decreased by three percent, reflecting some market difficulties in 2002.

TABLE 3
Canadian Production of Crude Oil and Natural Gas Liquids

	1998	1999	2000	2001	2002[1]
Conventional Light (East)	13.5	17.5	23.6	24.3	45.8
Conventional Light (West)	126.9	113.1	108.3	103.9	96.5
Synthetic	48.2	51.5	50.1	54.7	68.1
Pentanes Plus	27.5	27.2	27.3	25.9	24.5
Total Light	216.1	209.3	209.3	208.8	234.9
Conventional Heavy	86.5	83.0	89.0	90.9	87.8
Bitumen	45.7	42.1	44.4	42.8	47.6
Total Heavy	132.2	125.1	133.4	133.7	135.4
Total Crude Oil and Equivalent	348.3	334.4	342.7	342.5	370.4
Natural Gas Liquids	94.3	101.2	99.8	94.2	94.7

[1] Estimate

Ongoing development of Canada's oil sands resources resulted in production increases, with synthetic crude oil up by 24.5 percent and in situ bitumen up by 1.3 percent over last year.

While remaining established reserves are reduced by production each year, new discoveries, extensions to existing pools and revisions to reserves estimates in existing pools usually add to reserves. From 1997 to 2001, on a

cumulative basis, additions to established reserves of conventional light and heavy crude oil replaced 97 percent of production (Table 4). Declining WCSB reserves are nearly offset by reserves additions from the East Coast offshore.

The NEB's estimate of total Canadian remaining conventional crude oil and crude bitumen reserves at year-end 2001 (the last year for which data is available) is 28.5 billion cubic metres and is essentially unchanged from the previous year (Table 5). This means that reserves additions fully offset production for the year. It is noteworthy that the remaining reserves of crude bitumen, at 27.8 billion cubic metres, are sufficient to support in situ bitumen and oil sands mining production at current levels for about 700 years.

Estimates of remaining conventional crude oil reserves in Canada decreased by 2.9 percent to 680 million cubic metres in 2001, as production outpaced reserves additions. There were no changes to the initial reserves of crude bitumen in 2001; thus, remaining reserves decreased by an amount equivalent to bitumen production volumes.

TABLE 4

Conventional Crude Oil Reserves, Additions and Production – 1997-2001

	1997	1998	1999	2000	2001	Total
Additions	86	68	129	78	35	396
Production	81	87	78	79	84	409
Total Remaining Reserves	666	650	702	701	680	

(a) Historical production restated to "NEB" Terra Nova reserves added in 1999.

TABLE 5

Estimates of Established Reserves of Crude Oil and Bitumen at 31 December 2001

Conventional Crude Oil	Initial	Remaining
British Columbia[a]	123.0	25.5
Alberta[b]	2 583.0	278.4
Saskatchewan[c]	754.0	182.0
Manitoba[c]	37.4	3.8
Ontario[c]	14.4	1.9
NWT and Yukon:		
Arctic Island and Eastern Arctic Offshore[c]	0.5	0.0
Mainland Territories - Norman Wells	43.0	10.4
Nova Scotia[c] - Cohasset and Panuke	7.0	0.0
Newfoundland[c] - Hibernia and Terra Nova	205.1	178.3
Total	3 767.4	680.3
Crude Bitumen		
Oil Sands - Upgraded Crude[d]	5 590.0	5 195.0
Oil Sands - Bitumen[e]	22 740.0	22 575.0
Total	28 330.0	27 770.0
Total Conventional and Bitumen	32 097.4	28 450.3

(a) British Columbia Ministry of Energy & Mines and NEB (common database)

(b) Alberta Energy & Utilities Board and NEB (common database)

(c) NEB estimate for 31 December 2001

(d) Provincial Agencies and Offshore Boards

(e) Canadian Association of Petroleum Producers

(f) Bitumen abandoned 1990.

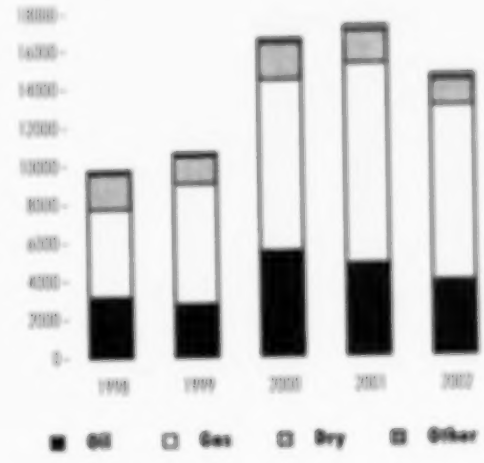
Note: Totals may not add due to rounding.

Upstream Activity

Following a record year in 2001, all indicators of upstream activity were down in 2002, in response to generally lower commodity prices at the start of the year. Some 14 600 wells were drilled in 2002, down from 17 200 wells the previous year. The focus of drilling remained on natural gas, with gas well completions making up 63 percent of all wells completed. In 2002, oil well completions were 20 percent lower than in 2001, in spite of oil drilling levels increasing as prices rose through the year.

Competition for land softened in 2002, with revenue from land sale bonuses collected by the four western Canadian provinces decreasing to $0.9 billion, down by 44 percent. The average price per hectare also weakened, at $289 versus $307 the year previous. Interest in frontier land acquisition was muted, with only two

FIGURE 3
Number of Wells Drilled



licences issued covering 20 000 hectares in the Mackenzie Delta region.

Seismic survey activity was reduced in 2002, with the number of active crews down 30 percent over the previous year. This level of activity is well below the five-year average. Seismic activity in western Canada was focused in the Southeast, Foothills, and Northwest regions of Alberta as well as in the Northeast region of British Columbia.

Expenditures of $17 billion for exploration and development of Canadian conventional and frontier areas (excluding oil sands) were made in 2002, down 20 percent from the previous year. Exploration spending continues to be about one-third of the total oil and gas exploration and development expenditure in Canada.

Crude Oil Exports and Imports

Total crude oil exports, including pentanes plus and upgraded bitumen (synthetic crude), are estimated at 227 800 cubic metres per day, an increase of 7 000 cubic metres per day over 2001. The 2002 total consisted of 38 percent light crude oil and equivalent and 62 percent blended heavy crude oil.

FIGURE 4
Light and Heavy Crude Oil Export Prices

The estimated value of crude oil exports in 2002 is $17.6 billion, compared with $15.7 billion in 2001. Revenues rose as a result of increased export volumes and higher crude oil prices in the second half of the year. In 2002, the estimated average light and heavy crude oil export prices were $37 and $32 per barrel respectively, compared with $30 and $26 per barrel in 2001.

The light/heavy differential[1] narrowed in 2002 to an average of about $5 per barrel compared with nearly $12 per barrel in 2001. With the lower price situation at the end of 2001, heavy crude oil producers shut-in approximately 2 000 cubic metres per day until March 2002. This helped to increase the price of heavy crude oil relative to light crude oil.

The most significant market for western Canadian crude oil is the U.S. Midwest region, followed by

1 The price difference between Edmonton Par Light and Hardisty Heavy crude oils.

Montana and southern Colorado, Wyoming and Utah. The export market for eastern Canadian offshore production has primarily been the U.S. East Coast. However, as Terra Nova began production in 2002, a new market, the U.S. Gulf Coast, opened up allowing for the penetration of incremental volumes of Canadian offshore crude oil.

In 2002, crude oil imports were 140 800 cubic metres per day and represented 16 percent of total refinery feedstock requirements in Canada.

Crude oil requirements for the Atlantic region and Quebec were made up of imports as well as increasing volumes of East Coast domestic production. Ontario refiners received about 29 percent of their feedstock requirements from foreign sources, down from 44 percent in 2001. At times during 2002, the price of North Sea Brent crude relative to WTI was high, making it uneconomical to import Brent crude.

Although the Board does not regulate imports, it does have a monitoring role. Crude oil is imported into Canada from a variety of sources, with the most prominent being the North Sea (Norway & UK) at 52 percent, the Middle East at 16 percent, and Latin America at 10 percent of imports.

Oil Refining

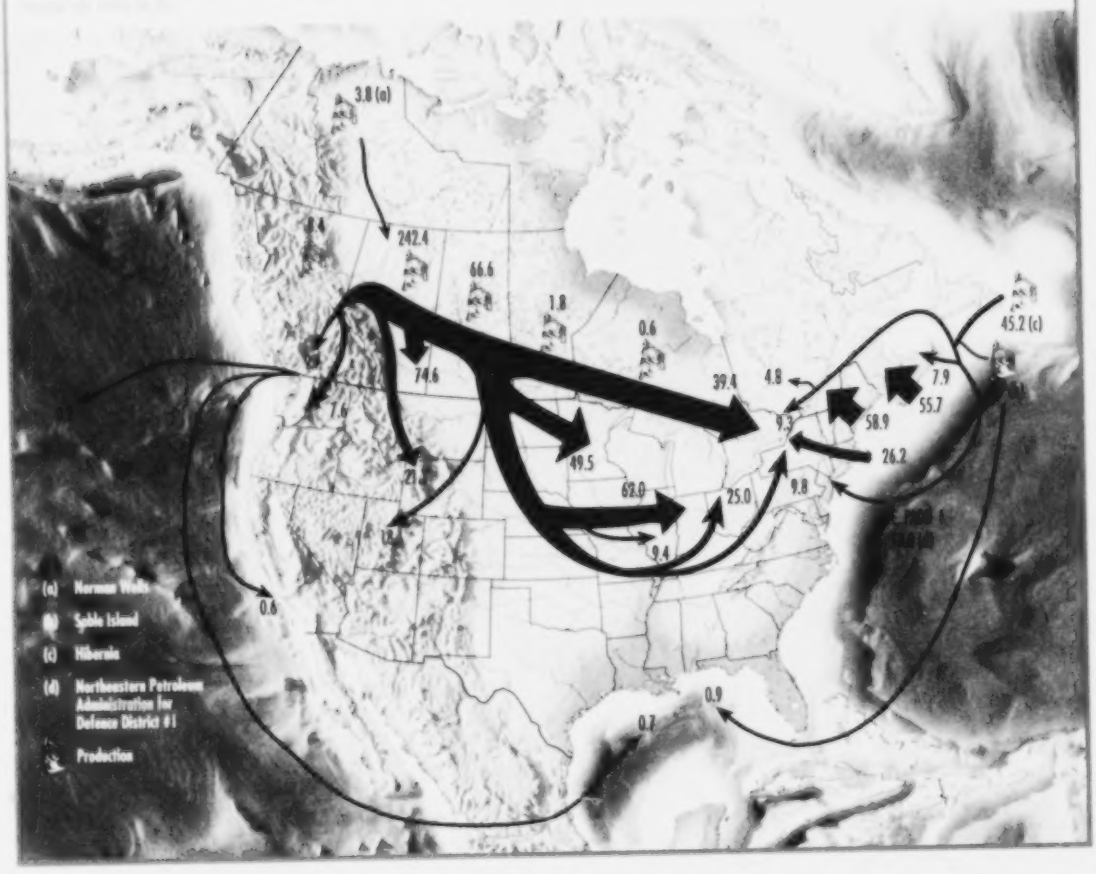
Canadian refining capacity in 2002 was 322 000 cubic metres per day, which remained unchanged from 2001 capacity. In 2002, the demand for petroleum products in Canada averaged 256 000 cubic metres per day, a seven percent decrease from 2001. Refinery production rose marginally to 319 000 cubic metres per day. Refinery receipts of domestic crude oil averaged 147 200 cubic metres per day, an increase of eight percent from 2001. Commercial inventories of petroleum products in Canada were marginally higher than in the previous year.

Main Petroleum Products Exports and Imports

Historically, Canada has been a net exporter of main petroleum products including motor gasoline and middle distillates. For 2002, exports of main petroleum products and partially processed oil are estimated at 53 530 cubic metres per day, a less than one percent increase from 2001. This marginal increase in exports was a result of warmer weather and weaker industrial activity in the U.S. Northeast, which led to reduced distillate demand in that market.

The estimated revenue from main petroleum product exports, including partially processed oil, was $4.4 billion in 2002, down from $4.5 billion in 2001. The decrease was a result of lower gasoline prices, an unusually warm winter and continued weakness in the U.S. economy. The decline in the middle distillate volumes was, in part, due to the lingering effects of September 11, in particular, the continuing decline in jet kerosene fuel demand. This revenue excludes product exports from crude oil processing agreements for which prices are not assigned.

FIGURE 5
Crude Oil and Equivalent Supply and Disposition



The United States continued to be the largest buyer of Canadian produced petroleum products, accounting for approximately 95 percent of total exports. Exports were also made to Europe and small volumes to Mexico. The U.S. East Coast continued to be the largest market, followed by the Midwest and the U.S. West Coast.

As of July 1, 2002, the federal government's *Sulphur in Gasoline Regulations, 1999*, limit the sulphur in gasoline to an average of 150 parts per million (ppm). After 1 January 2005, all gasoline sold in Canada must average 30 ppm or less. These regulations coincide with the new vehicle emission control system (known as Tier 2) being phased in from 2004 to 2009, which requires low sulphur gasoline in order to operate efficiently. Canada has aligned itself with the United States to regulate sulphur in gasoline. However, the United States has chosen a more complex approach and is not expected to reach 30 ppm of sulphur in gasoline until at least 2006.

Imports of main petroleum products in 2002 are estimated at 17 000 cubic metres per day, a 20 percent decrease from 2001. The decline reflected lower imports of heavy fuel oil, diesel fuel and motor gasoline.

Oil Pipeline Capacity

In 2002, Enbridge Pipelines Inc. (Enbridge) operated at approximately 77 percent of its total capacity, compared with 76 percent in 2001, with the actual throughput averaging 209 000 cubic metres per day. In July, a break occurred on its heavy crude oil pipeline (Line 4) near Duluth, Minnesota. This caused apportionment of 11 percent on this line for the remainder of July and eight percent apportionment for the month of August. U.S. regulators placed a one-year pressure restriction on the line, which resulted in a decrease of heavy exports through Line 4. Average utilization in 2002 for Enbridge's Line 9 (crude oil pipeline from Montreal to Sarnia) was approximately 80 percent. This seven percent drop in Line 9 utilization compared with 2001 was due to lower amounts of North Sea imports into Ontario.

In 2002, the Trans Mountain Pipeline Company Ltd. (TMPL) system operated at 82 percent of its light crude oil capacity, compared with 85 percent in 2001. On this system, percent usage is rated in terms of light crude capacity, and has been decreasing due to the increasing volumes of heavy crude oil being transported. In 2002, Express Pipeline Ltd. increased throughput due to growth in demand in the markets it serves, operating at 97 percent of its capacity compared with 90 percent in 2001.

Natural Gas Liquids (excluding Pentanes Plus)

Natural gas liquids (NGLs) include ethane, propane, and butanes extracted from natural gas, as well as propane and butanes produced from crude oil refining. The Board estimates that, in 2002, approximately 80 percent of propane supply and 58 percent of butanes supply came from natural gas production, with the remainder from refinery processes, about the same as in the previous year. Production of NGLs from gas plants and refineries was 94 700 cubic metres per day in 2002, an increase of less than one percent compared with 2001.

Ethane production[1] was 41 200 cubic metres per day, propane production was 29 000 cubic metres per day and the production of butanes was 24 500 cubic metres per day in 2002. This represents an increase of eight percent for ethane production and a decrease of four percent and five percent for propane and butanes, respectively, compared with 2001 levels.

High natural gas prices relative to propane and butane experienced throughout most of 2002 may have had a negative impact on gas plant production. As a result, the decrease in propane and butane production may reflect producers' decisions to bypass extraction facilities, leaving liquids in the gas stream when processing margins were uneconomical for high cost producers. Ethane continued to be extracted by straddle plants and by gas plants with ethane extraction capability, in light of the increased ethylene production requirement at Joffre, Alberta since late 2000.

Exports of NGLs during 2002 are estimated at 31 100 cubic metres per day, an eight percent increase from 2001. Ethane exports in 2001 and 2002 were negligible due to the increase in ethane requirement at the Joffre petrochemical facilities. Propane exports were 24 600 cubic

1 Includes miscible flood injection volumes for enhanced oil recovery projects.

metres per day and butanes exports were 6 500 cubic metres per day, reflecting an eight percent increase over 2001 for both commodities. The U.S. Midwest continued to be Canada's largest market for propane and butanes, accounting for 67 percent of the total export volume. Smaller amounts were delivered to the U.S. East Coast and U.S. West Coast. Although export volumes increased in 2002, the estimated value of NGL exports is $2.0 billion, down 18 percent from 2001, a result of lower prices in 2002.

Natural Gas

Natural Gas Markets

In contrast to the record high prices experienced in 2001, Alberta spot gas prices remained below $4 per gigajoule for the majority of 2002 (Figure 6). However, as the market entered the 2002/03 heating season, gas prices increased about 25 percent to just over $5 per gigajoule. This price increase reflected a number of factors including normal increases in seasonal heating demand, expectations that North American gas production would continue to decline moderately, and increases in crude oil prices as a result of global events.

FIGURE 6
Alberta Natural Gas Prices - AECO "C"

Gas well drilling activity in Canada during 2002 was near historically high levels, though down from the record gas drilling that occurred during the previous year. Lower average natural gas prices in 2002 and historically high storage levels in North America following winter 2001/02 contributed to lower drilling levels compared with 2001.

Demand

Canadian natural gas demand increased during 2002 by 2.4 billion cubic metres to a level of 69.2 billion cubic metres, a 3.6 percent increase over 2001. Domestic gas consumption rose in spite of very mild weather for the majority of the 2001/02 heating season. The strength of the Canadian economy, which grew at an annual rate of 3.4 percent, combined with lower gas prices, supported gas demand increases.

In 2002, domestic gas consumption in the Maritime gas market was up sharply, totaling about 1.2 billion cubic metres. This increase in consumption was due to construction of additional distribution facilities and favorable prices compared with alternate fuels.

Production

Average gas production declined about one percent in 2002, to 482 million cubic metres per day in 2002 from 487 million cubic metres per day in 2001. The decline in average production is

primarily attributed to lower drilling levels through the year in the WCSB and declining production from several gas fields, including the Ladyfern field in northeast British Columbia.

Total Canadian marketable gas production in 2002 reached 176 billion cubic metres. The distribution of production by province has shifted slightly, largely due to declines in Alberta. In 2002, Alberta accounted for 77 percent of total Canadian production, British Columbia 15 percent, Saskatchewan three percent, Nova Scotia three percent, NWT and Yukon one percent, and Ontario less than one half of one percent.

TABLE 6
Estimates of Established Reserves of Marketable Natural Gas at 31 December 2001

	Initial	Remaining
British Columbia	663.1	252.1
Alberta	4 178.2	1 182.7
Saskatchewan	215.0	77.6
Ontario	44.6	11.6
NWT and Yukon	26.8	14.0
Nova Scotia - Offshore	85.0	76.5
Total	5 212.7	1 614.5

Reserves

The NEB's estimate of remaining marketable gas reserves at the end of 2001 is 1 615 billion cubic metres (Table 6). Strong exploration activity in 2001 contributed to a reserves replacement of about 98 percent of gas production during 2001. Over the last five years, cumulative additions of marketable gas reserves replaced 86 percent of total gas production (Table 7). Despite reduced drilling in 2002, discoveries of new large pools in British Columbia and southwest Saskatchewan (Shackleton) were announced.

TABLE 7
Natural Gas Reserves, Additions and Production

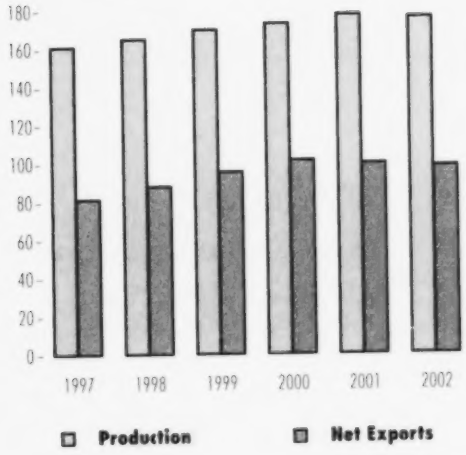
	1997	1998	1999	2000	2001	Total
Additions	130	119	152	153	172	726
Production	161	165	170	173	177	846
Total Remaining Reserves	1 698	1 651	1 629	1 622	1 615	

Natural Gas Exports and Imports

In 2002, net export volumes were 98.2 billion cubic metres, a decrease of 1.6 percent from 2001, but three percent above the five-year average. Total gross exports for 2002, at 105.3 billion cubic metres, were down one percent from the previous year because of a weaker U.S. economy and a rebound in available hydroelectric power in western U.S. markets. Imports of natural gas increased to 7.1 billion cubic metres compared with 6.5 billion cubic metres in 2001, corresponding to the overall increase in domestic demand for 2002.

Net exports accounted for 56 percent of total Canadian production in 2002, down from 59 percent in 2001 (Figure 7). The distribution of exports in 2002 was 43 percent to the Midwest and Mountain regions, 30 percent to the Northeast, and 27 percent to California and the Pacific Northwest. About 83 percent of these exports flowed under short-term orders; the remainder of exports flowed under long-term licences (Figure 8).

FIGURE 7
Canadian Natural Gas Production and Net Exports

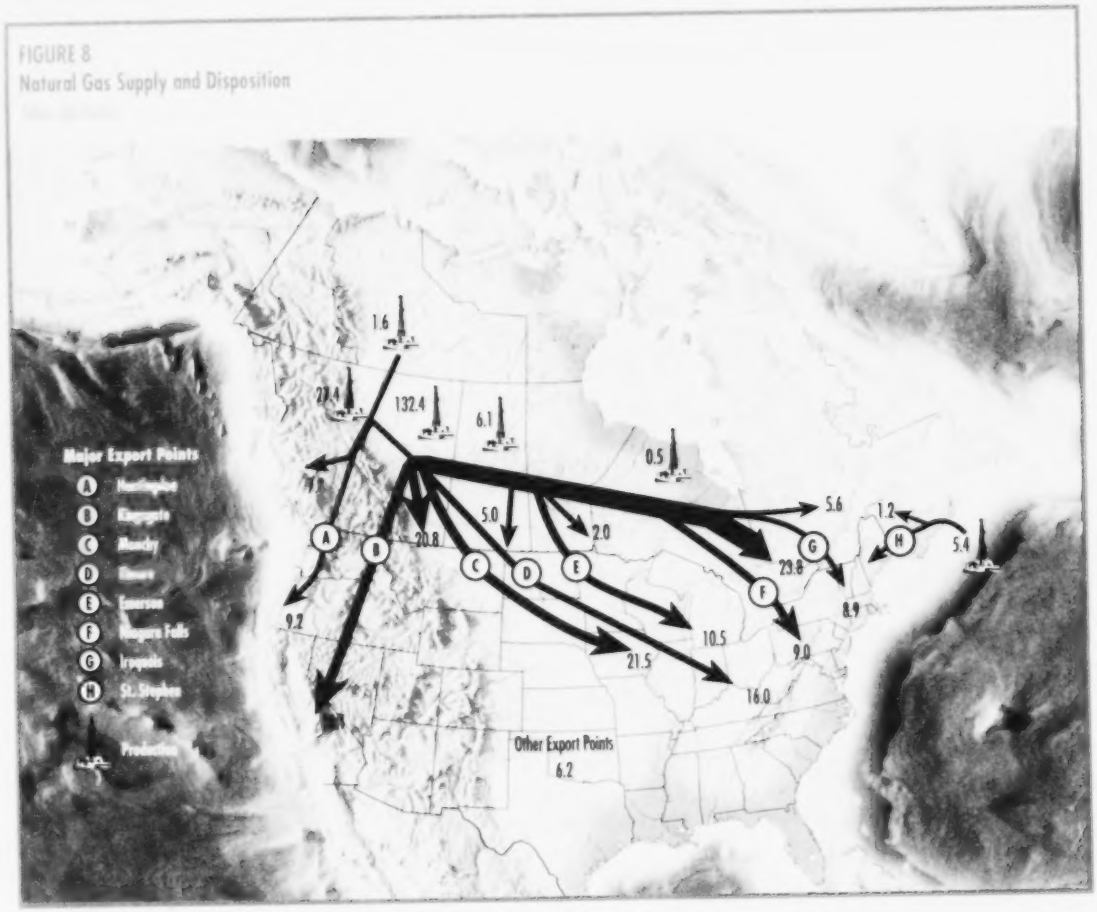


The revenue from Canadian natural gas exports declined sharply, from $26 billion in 2001 to $17 billion in 2002, a decrease of about 32 percent, reflecting reduced export volumes and lower natural gas prices. The average gas export price was $4.37 per gigajoule in 2002 versus $6.04 per gigajoule in 2001, a decrease of 28 percent.

Electricity

The Board's electricity mandate relates primarily to the construction and operation of international power lines and the export of electricity. Challenges are presented by the significant ongoing changes in the structure of the North American electricity industry. The Board must be aware of these changes and their potential impacts, while continuing to meet its legislated regulatory and advisory obligations.

FIGURE 8
Natural Gas Supply and Disposition



Beginning in the early 1990s, major initiatives have been undertaken to restructure electricity markets in North America. In the traditional market structure, a single utility performed the functions of generation, transmission and distribution of electricity within a defined franchise area, with limited access to other markets. Prices paid by consumers were based on the embedded costs approved by regulators.

The intent of restructuring is to separate the three functions and to introduce competition in the generation sector. Also, open access to transmission grids, or wholesale access, is provided to enable distribution companies and, in some cases, other large buyers to purchase electricity from the most competitive generation sources. Retail access occurs when marketers have the ability to obtain access to distribution systems to sell electricity to end-use consumers, thus competing with the incumbent distribution companies, and allowing consumers a choice among suppliers. Full retail access occurs when all end-use consumers have this choice. Prices in the restructured environment are negotiated between buyers and sellers.

Because the regulation of the electricity industry remains mainly with the provinces, the extent of restructuring in Canada varies across the country depending on the circumstances and choices of each province. At the end of 2001, most provinces had open access to electricity transmission grids and some competition in generation (i.e. independent power producers). To some extent, open access to transmission was motivated by the need to provide reciprocal access to U.S. entities in order to gain access to U.S. wholesale markets (see below). With its introduction of full retail access on 1 January 2001, only Alberta had a completely restructured market.

Major developments with respect to restructuring in Canada during 2002 include the following:

On 1 May 2002, Ontario opened its market to wholesale and retail competition. Wholesale prices are established on the basis of competitive bids and offers in the IMO[1]-administered market and retail prices paid by consumers reflect these prices. An important aspect of Ontario's restructuring is the Market Power Mitigation Agreement, which, among other provisions, specifies the terms under which the generating assets of the former Ontario Hydro will be divested. On 11 November 2002, the provincial government announced a retail price cap of 4.3 cents per kilowatt hour for residential and other designated small-volume consumers, retroactive to 1 May 2002 and extending to May 2006. The government also initiated an inquiry into the operation of certain aspects of the Ontario market.

Following its December 2001 policy announcement, *Nova Scotia's Energy Strategy*, the Nova Scotia provincial government established the Electricity Market Governance Committee in May

1 Independent Electricity Market Operator of Ontario.

2002. Competition will be introduced in a staged process beginning with electricity sales to the province's six municipal utilities. There will also be competition in the construction of new generation and access will be permitted to the transmission system and to markets.

In New Brunswick, specific initiatives toward restructuring the electricity market were announced following the release of the government's *White Paper on Energy Policy* in January 2001. On 21 June, NB Power filed an application with the New Brunswick Board of Commissioners of Public Utilities for an Open Access Transmission Tariff, which would enable the opening of a competitive market in April 2003. This would allow 40 large industrial and three wholesale transmission customers to choose their respective electricity suppliers. The tariff also includes a standard interconnection agreement to bring consistency and efficiencies to connecting competitive generation. The government announced it was adopting a number of the recommendations of its Market Design Committee, including: establishing an independent system operator for monitoring and controlling access to New Brunswick's transmission system; establishing a bilateral market; and restructuring NB Power into a holding company, with operating subsidiaries required to operate on a commercial basis.

In November, the Government of British Columbia announced a number of initiatives for the electricity industry in its new energy policy, *Energy for Our Future: A Plan for BC*. The policy promotes private sector development of generation and, by the creation of the BC Hydro Transmission Corporation, a separate entity from BC Hydro, the policy also promotes improved access to the B.C. grid and participation by independent power producers in U.S. wholesale markets. According to the policy, consumers in British Columbia are expected to continue to benefit from the low cost of installed generation, referred to as the "heritage contract." An inquiry into BC Hydro's rates is expected before the end of the fiscal year 2003-2004 and the entire plan is expected to be implemented by the end of 2004.

The major current initiative in the restructuring of U.S. electricity markets is the formation of Regional Transmission Organizations (RTOs), as mandated by the U.S. Federal Energy Regulatory Commission (FERC). The purpose of RTOs is to facilitate non-discriminatory access to transmission systems and thereby promote competition in wholesale markets as intended by FERC Order 888. A key aspect of Order 888 is the reciprocity requirement, which has implications for Canadian exporters. Reciprocity effectively requires that Canadian transmission companies provide U.S. marketers access to their transmission facilities. Canadian exporters utilizing those facilities then qualify for a licence from FERC to market electricity in U.S. wholesale markets.

FERC Order 2000 (December 1999) defined the functions and characteristics of an RTO. Given the international nature of transmission systems, Canadian participation in RTOs was invited. In July 2001, the FERC, in a series of orders, proposed that there be four RTOs in the U.S., one each in the Northeast, the Southeast, the Midwest, and West. The Electric Reliability Council of Texas, which includes most of the state of Texas, would be a fifth RTO. After consultation, and to address issues raised by the industry and state regulators, the FERC issued a Notice of Proposed Rulemaking on Standard Market Design (SMD) in July 2002. The main elements of SMD include a standard tariff, a method of managing transmission congestion, market monitoring and ongoing input from state regulators by Regional State Advisory Councils. While SMD final rule is expected to further the RTO initiative, there remain several regional issues to be addressed. During the fall and winter of 2002-2003, the FERC engaged the industry, including potential Canadian participants, toward developing a final rule in 2003.

FERC's plans to oversee implementation of SMD across the United States by the end of 2004. The exact timing and regional adaptation of SMD is expected to vary and the number of RTOs that will eventually result is uncertain. The terms of participation in RTOs for Canadian parties will be based on the unique circumstances and needs expressed by the transmission entities in each province.

Electricity Production

Canada's electricity generation base is dominated by hydro facilities, primarily in the provinces of Quebec, Manitoba, British Columbia, and Newfoundland. Although some areas of the country experienced low water reservoir levels in the first part of the year, hydro production improved in the latter half of the year, thus returning hydro generation to normal levels (Table 8). This decreased the need to run thermal facilities. Nuclear production also declined, partially due to maintenance outages. The net result was that electricity production increased by 2.4 percent compared with 2001. Domestic demand increased by about three percent, therefore gross exports declined slightly.

TABLE 8
Electricity Production[1]

	1998	1999	2000	2001	2002[2]
Hydroelectric	327.0	341.7	353.3	328.2	350.9
Nuclear	67.5	69.3	68.7	72.4	69.9
Thermal	149.5	147.1	160.8	164.2	157.6
Total	544.0	558.1	582.8	564.8	578.4

(1) Source: Statistics Canada Electric power Statistics
Net production by plant type in Canada

(2) Estimate

Exports and Imports

Low reservoir water levels during the first half of 2002 also took their toll on Canadian hydroelectricity exports. Although conditions began to improve in the second half of the year, exports continued to decline from 2001, and reached their lowest level since 1993. Firm and interruptible exports in 2002 totaled 36 terawatt hours.

In contrast, the number of companies that exported electricity from Canada increased to 30, an all time high. This reflects an increase in the number of export authorization applications before the Board in 2002, and an increase in the number of marketers (i.e., companies that neither own nor are affiliated with generating assets) involved in the export market. Open access in Alberta and Ontario's markets also facilitated marketer involvement.

Despite the increased number of players in the electricity export market, the five historically largest exporters continued to dominate the export market. Hydro Québec, Manitoba Hydro, Powerex, Ontario Power Generation Inc./Ontario Hydro Interconnected Markets, and NB Power accounted for 91 percent of electricity exports.

Export and import prices both moderated in 2002 and returned to levels similar to those seen in 1999, prior to California's electricity crisis. Likewise, export revenue declined to $1.8 billion. Revenues received for electricity exports in 2002 averaged $46 per megawatt hour and imports averaged $36 per megawatt hour.

FIGURE 9
International and Interprovincial Transfers of Electricity[a]

Imports declined slightly from their 2001 level to 13 terawatt hours, but were still strong. Ontario relied on imports from the Northeast U.S. to meet its peak demand in the hot summer months. On the other side of the continent, plentiful water flows in the Pacific Northwest resulted in low-priced electricity, which British Columbia at times chose to import instead of scheduling its own generation.

Overall, Canada's net exports in 2002 were 23 terawatt hours, which is a slight increase from last year since the decrease in imports outweighed the decrease in exports. Figure 9 shows the interprovincial and international transfers of electricity in 2002.

safety and environment

A primary aspect of the NEB's purpose is to promote safety and environmental protection. This is reflected in two of the NEB's four corporate goals. While these two goals have separate intents, they are operationally linked and form the cornerstones of the NEB's physical regulation program. Initiatives undertaken by the NEB are designed to result in both increased safety and increased protection of the environment.

Goal 1: NEB - regulated facilities are safe and perceived to be safe.

Goal 2: NEB - regulated facilities are built and operated in a manner that protects the environment and respects individuals' rights.

The inherent risks associated with facilities under the NEB's jurisdiction are managed through competent design, construction, operation and maintenance practices. The NEB plays a significant role in safety and environmental protection by ensuring that a regulatory framework that encourages companies to maintain or improve their performance is in place and in line with public expectations.

The Board ensures that any safety and environmental risks associated with the construction and operation of regulated facilities are identified and managed by pipeline companies. The Board does this by:

- assessing new facilities applications for associated safety and environmental issues;
- ensuring that appropriate mitigative measures, conditions, and environmental protection plans are in place before granting project approval;
- monitoring construction and operations by inspections and audits to verify that regulatory requirements, as well as other standards identified through the application process, have been and will continue to be met;
- investigating any failures or incidents that occur, with the intent of preventing similar incidents;
- developing regulations and guidelines for the safety and protection of the public, property and the environment; and
- conducting inquiries into safety and environmental issues.

To provide direction and leadership in safety and environmental protection, the Board regularly meets with industry through various forums. In 2002, the NEB hosted two workshops in which industry and other stakeholders were invited to participate. *The Pipeline Public Awareness Workshop*, held in Halifax in June, was devoted to sharing the pipeline industry's damage

prevention and public awareness best practices. The second workshop, also held in June, was designed to provide an understanding of the NEB audit program, discuss and finalize revisions to the *Guidance Notes for the Onshore Pipeline Regulations, 1999*, and solicit feedback on the Board's proposed approach to the regulation of pressure vessels and piping. In addition, the NEB participated in the 2002 International Pipeline Conference by presenting four papers on pipeline regulation.

In 2002, the Board continued its work on the consolidation of safety data submitted by NEB-regulated companies for its Safety Performance Indicator (SPI) initiative. The SPI initiative allows the Board to obtain benchmark safety data for future comparison between NEB-regulated companies and companies regulated by other agencies. A report detailing the SPI data, and comparing results with other jurisdictions, will be published in early 2003.

Environmental Assessments

Upon receiving an application, the Board determines whether an environmental review is required under the NEB Act or under both the NEB Act and the CEA Act. When an application does not trigger the CEA Act, the Board considers the environmental aspects of the project in accordance with the NEB Act as part of its public interest mandate. When the CEA Act is triggered, the majority of projects require the Board to conduct an environmental screening of the proposed project. However, certain applications require the completion of a comprehensive study and the preparation of a comprehensive study report (CSR). The CSR is submitted to the Minister of the Environment, who is responsible for determining the next steps in the environmental assessment process. A public comment period takes place once the CSR has been submitted and prior to the Minister's decision.

In 2002, the NEB continued as the lead responsible authority for two projects that require CSRs. The first was for NB Power's application to construct and operate a 345 kilovolt international power line, approximately 95 kilometres in length, that would run west from the Point Lepreau Peninsula to the international boundary near Woodland, Maine. The second was for an application by Westcoast to extend the Grizzly Rav Gas Transmission System and construct the Weejay lateral. In addition, the NEB participated as a responsible authority in a third CSR for the EnCana Deep Panuke project. All three CSRs were completed and submitted to the Minister of Environment.

Compliance Monitoring

The NEB monitors the pipelines and facilities it regulates from the construction phase through to abandonment. NEB inspection staff monitors construction to verify compliance with:

- the conditions of the project approval;
- the requirements set out in the NEB's *Onshore Pipeline Regulations, 1999* (OPR-99), relevant codes and the company's construction safety manual; and

- the commitments set out in the company's environmental protection plan and its application.

In addition to inspections undertaken during construction, NEB inspectors conduct post-construction monitoring to evaluate the success of the reclamation measures and to verify that the environment and property is being properly protected.

Once a pipeline or facility is in operation, NEB inspection officers conduct safety inspections of pipeline facilities, such as pump or compressor stations, on a periodic basis depending on the risk posed by the operating facility. These safety inspections are conducted to determine compliance with the requirements of NEB regulations and the *Canada Labour Code, Part II*. The NEB also conducts inspections along existing pipeline systems to identify whether third party excavation work is being completed in compliance with the *National Energy Board Pipeline Crossing Regulations*. On frontier lands, the NEB conducts similar inspections related to geophysical and drilling programs and production operations to verify compliance with the approved program and relevant regulations. Occupational safety and health matters are also addressed during these inspections.

The NEB supports a cooperative approach to compliance, working with pipeline companies to ensure that environmental commitments and safety requirements are met. As part of this approach, the NEB promotes safety and environmental training for construction personnel to ensure that construction crews are aware of and understand the project's safety and environmental requirements and the NEB's responsibility to monitor compliance. When a non-compliance situation is identified, it is generally handled by obtaining an immediate and voluntary correction by the company. Inspection Officers may also ask for a written assurance of voluntary compliance (AVC) from a pipeline company if the situation cannot be corrected immediately. NEB Inspection Officers can also issue a field order when they believe a situation could jeopardize safety, the environment or property and that corrections must occur immediately. In 2002, the NEB received 217 AVCs and issued one field order for non-compliant activities.

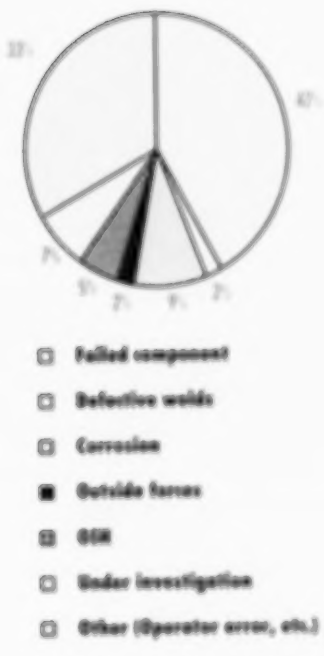
The NEB tracks the extent to which companies comply with the conditions issued on facility approvals and the effectiveness of those conditions in protecting the environment. For projects authorized in 2002, where information is available through Board inspections or post-construction monitoring reports, 94 percent of conditions were effective in contributing to the goal of environmental protection. The Board will continue to monitor condition compliance for those projects that are not yet complete, and therefore information is not available, or where the post-construction monitoring reports have not yet been filed. The NEB uses this information to improve the clarity and effectiveness of conditions that it places on facility approvals.

Management System Audits

During 2002, the Board continued with the implementation and further development of its comprehensive audit program of company management systems. The audit program is

designed to assess compliance with the OPR-99. Eleven management system audits were conducted in 2002, including four that had a broad scope, five that focused on emergency preparedness and response, and two that focused on pipeline integrity management. In response to audit findings, the Board received eight corrective action plans during the year and is presently developing a follow-up program.

FIGURE 10
Causes of Incidents in 2002



Incident Investigation

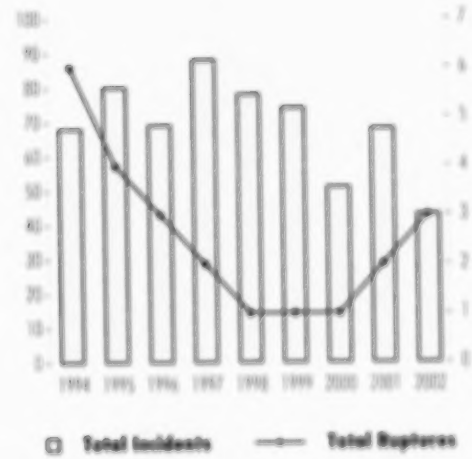
Incidents include those events that may cause death or serious injury to a person, a significant adverse effect upon the environment, an unintended fire or explosion, or the unintended or uncontrolled release of gas or hydrocarbon. Even minor incidents can indicate the condition of a pipeline or a required improvement to safety programs.

The NEB, in cooperation with the TSB, investigates all reported incidents to determine cause, whether any trends are evident, and what action is necessary to prevent similar occurrences in the future. In general, the NEB conducts on-site investigations for those incidents that result in death, serious injury or a significant release of hydrocarbons. Figure 10 represents the causes determined for incidents that occurred in 2002.

There has been a steady improvement in industry's safety performance in recent years. Forty-three incidents were reported under the OPR-99 in 2002. This number is significantly lower than the 68 reported in 2001 and the seven-year average of 66 incidents (Figure 11). Of the 43 incidents reported in 2002, more than seventy percent occurred in controlled areas such as compressor and pumping stations or gas plants: 25 occurred at compressor and pump stations; six at gas plants; with the remaining 12 occurring along the pipeline right of way. In 2002, two incidents resulted in injuries to pipeline workers, with one of those directly related to construction. This is one-half of the 2001 total of four injuries, where one was directly related to construction.

The NEB has a safety target of zero ruptures on the pipelines it regulates. In 2002, there were three ruptures on NEB-regulated pipelines. The first rupture occurred on 14 April 2002 on TransCanada's 914-mm diameter natural gas line 100-3 near Brookdale Manitoba (west of Winnipeg). The final investigative report by the TSB into the cause of this rupture is scheduled for release during the first quarter of 2003.

FIGURE 11
Pipeline Incidents and Ruptures 1994 to 2002



On 15 May 2002, a rupture occurred on Westcoast's 457 mm diameter sour gas pipeline, located approximately seven kilometres southeast of Fort St. John, British Columbia near the Alaska Highway. The NEB is currently investigating the cause of this incident and expects to release a public report by the second quarter of 2003.

On 7 December 2002, Trans Northern experienced a pipeline rupture on its 273 mm diameter mainline near Pavillon de Saint Clet, Quebec, close to the Ontario border. The rupture resulted in a release of 32 cubic metres of diesel fuel onto agricultural land. This incident is presently under investigation by the TSB.

The NEB is responsible for verifying that companies under its jurisdiction have adequate emergency response plans to mitigate any negative effects on personnel safety, public health or the environment resulting from oil spills or natural gas leaks. Emergency response plans are examined during audit to ensure that appropriate procedures are in place. The NEB encourages and participates in emergency response exercises sponsored by pipeline companies.

The NEB's primary role during an emergency is to monitor the company's response, ensuring that all reasonable actions are being taken to protect public safety and the environment. The NEB uses an information tracking system to verify that the company fulfills its remedial responsibilities regarding sites that have been affected by spills or releases. In 2002, 35 spills and releases were reported, down from 46 reported the previous year. In addition to the three ruptures, one other significant spill involved the release of 1000 cubic metres of crude oil at the Enbridge pump station in Kerrobert, Saskatchewan as a result of a failed flange gasket.

In the frontier region, a motor vehicle accident resulting in a fatality occurred on 4 February 2002 on a private road used for access to a seismic program in the NWT. The NEB investigated the accident under the *COGOA Act* and under the *Canada Labour Code Part II* on behalf of Human Resources Development Canada and in conjunction with Workman's Compensation NWT. In April 2002, the NEB issued a Safety Advisory to operators identifying the hazard and advising them to ensure proper safety equipment and procedures are in place to reduce the hazards when attempting to perform equipment repairs on roadsides. A report was submitted by the NEB to Human Resources Development Canada to further assist in its independent investigation.

Hazardous occurrences in the frontier, as defined by the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Part II*, decreased from 85 in 2001 to 45 in 2002. This decrease was primarily related to a reduction in spills and fewer incidents of equipment breaking through ice. Disabling injuries increased marginally from 2.57 per million hours worked in 2001 to 2.79 per million hours worked in 2002.

Development of Regulations and Guidelines

A key activity in promoting safety and environmental protection is the development of regulations and supporting guidelines. The NEB is continuing to move toward a goal-oriented approach to its regulations in order to promote increased industry responsibility, allow for

flexibility and efficiency, and provide opportunities to adopt improved operational and safety techniques in a more timely manner. The goal-oriented approach places an increased emphasis on risk assessment and management systems.

In 2002, the *Processing Plant Regulations* were published in *Canada Gazette Part I* and it is expected that the regulation will come into force in early 2003. This regulation deals with the design, construction, operation and abandonment of federally regulated gas processing plants and was developed using the goal-oriented approach. The Board also made progress on the proposed *Damage Prevention Regulations*, which deal with damage prevention for buried pipelines. In preparation for the development of this new regulation, the Board undertook a comprehensive survey involving over 1 200 respondents representing interested companies and other stakeholders. A copy of this report can be found on the NEB's Internet site. A conceptual draft of the regulation was released in May and, during September, information sessions were held in central Alberta and rural areas of New Brunswick and Nova Scotia. Additional sessions and open houses are planned for the remaining regions of Canada in early 2003.

The NEB is also active in developing and maintaining regulations regarding exploration and development activities under the COGO Act. These regulations, developed in co-operation with NRCan, C-NOPB, C-NSOPB, the Nova Scotia Department of Natural Resources and the Newfoundland Department of Mines and Energy, ensure common regulatory approaches for activities in the offshore regions, the NWT and Nunavut. Consultations continued in 2002 to amend many of the regulations and guidelines under the COGO Act and mirror regulations under the Accord Implementation Acts. Arising from comments from the Standing Joint Committee for the Scrutiny of Regulations, a number of amendments came into force in 2002 on the *Canada Oil and Gas Drilling Regulations* and the *Canada Oil and Gas Production and Conservation Regulations*. As well, the NEB has provided advice to Human Resources Development Canada for the update of the *Oil and Gas Occupational Safety and Health Regulations* under the *Canada Labour Code, Part II*. The C-NSOPB, the C-NOPB and the NEB also approved the *Offshore Waste Treatment Guidelines* in 2002. These guidelines describe minimum standards for the treatment and disposal of offshore drilling and production wastes.

In May 2002, the Board issued a *Memorandum of Guidance (MOG) on Consultation with Aboriginal Peoples*. The purpose of the MOG was to clarify the Board's role where the Crown may have an obligation to consult with Aboriginal peoples. In April 2002, the Board issued further guidance to regulated companies detailing the nature of information that should be filed with applications where the proposed project has the potential to interfere with Aboriginal rights. Since the release of the MOG, the Board has been committed to working with other federal departments and agencies to develop a workable framework for Aboriginal consultation in the context of the Board's mandate.

The Board also participated with industry, government and stakeholder groups in a number of initiatives to develop consensus-based standards, best practices and common approaches to

safety and environmental issues. For example, the NEB was involved in the revision of the Canadian Standards Association (CSA) standard for oil and gas pipeline systems, CSA Z662, which is scheduled for release in 2003.

Research and Development

The NEB acts as the secretary for the Environmental Studies Research Funds (ESRF) management board, which provides funding for environmental and social projects regarding petroleum exploration, development and production activities on frontier lands. In 2002, the Management Board approved 15 new studies and continued to provide funding to the updating of the CSA Standard for Offshore Structures. ESRF reports can be ordered through their Internet site at www.esrfunds.org.

economic efficiency

Goal 3: Canadians derive the benefits of economic efficiency.

The Board's third corporate goal is to ensure Canadians derive the benefits of economic efficiency. There are three main ways in which the Board has an economic impact:

- through the decisions it renders;
- through the energy market information it provides to Canadians; and
- through the efficiency of its regulatory processes.

In addition, the Board must manage its own expenditures efficiently.

Impact of NEB Decisions

The Board strives to promote, through its decisions, the development of an efficient natural gas and oil pipeline infrastructure that meets the requirements of its users. An efficient infrastructure requires that there is an appropriate level of capacity to meet both upstream and downstream needs, that shippers have adequate service options, and that pipeline companies earn an appropriate return on their investments.

FIGURE 12
NYMEX HH/AECO "C"/Dawn Natural Gas Price

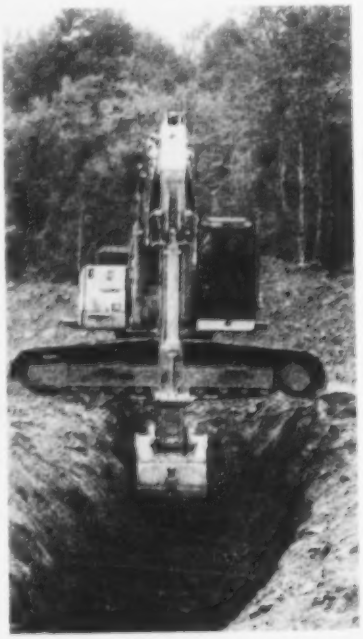
A good market measure of the adequacy of pipeline capacity can be obtained by comparing the prices between key market hubs. In the natural gas market, two of the most important hubs in North America are the AECO "C" Hub in Alberta and the Henry Hub in Louisiana. Figure 12 illustrates that prices associated with these two supply hubs have correlated closely since late 1998, indicating that there has been adequate capacity between the WCSB and eastern North American markets. A market hub is developing at Dawn, Ontario that allows many eastern gas buyers to purchase gas at the hub and elect not to hold transportation capacity on long-distance pipeline systems. Prices at the Dawn Hub also correlated well with the AECO "C" and Henry Hubs (also Figure 12).

There have been no applications with respect to major expansions of pipeline capacity serving the WCSB since the startup of the Alliance pipeline

system, reflecting the leveling off of production in the WCSB. In contrast, it appears that East Coast production will continue to grow, and in this regard the Board approved an expansion of the M&NP system to accommodate an additional 14 million cubic metres per day of production.

In 1994, the Board made a decision on a generic return on equity formula, which was intended to apply to most of the large pipelines under Board jurisdiction. Shortly thereafter, there were a number of negotiated settlements between pipeline companies and their shippers, in which they mutually agreed upon tolls and tariffs. As these were multi-year agreements, the Board had very few hearings on tolling matters for several years. The Board's generic formula is embedded in a number of the negotiated settlements, although some settlements include alternative means of determining the appropriate return on equity.

Recent changes in the structure of the pipeline transportation sector have made it more difficult for the pipelines to reach unanimous agreements with their shippers. Indications of this surfaced in 2001, as the Board held four hearings on toll matters. In 2002, the Board rendered a decision on an application from TransCanada requesting that it review the company's return on capital employed, which was based on the Board's 1994 formula from RH-2-94. In its decision, the Board denied the application, ruling that its own formula was still appropriate. The Board further ruled that the level of business risk facing the TransCanada Mainline has increased since 1994 and decided to increase the Mainline's deemed common equity ratio to 33 percent from 30 percent, effective 1 January 2001. TransCanada has applied to the Board for a review of this decision.



In September, the Board denied an application from the Province of New Brunswick requesting that the Board establish rules which would apply when it considers applications for short-term export orders for incremental supplies of Scotian offshore natural gas if those supplies could not meet both domestic and export requests for service. The Board decided that it would be inappropriate at this time to implement procedures that would unduly interfere with the normal operation of the natural gas market. In reaching this conclusion, the Board noted that the public hearing held on this matter, in July 2002, did not produce any direct evidence that Maritime gas buyers have not had access to Scotian offshore gas supplies on terms and conditions similar to those in export markets. Further, there was no evidence that any gas seller had refused to negotiate in good faith. The Board decided, however, that it must enhance its monitoring efforts of gas markets in Maritime Canada, and in that regard has established a team that will monitor the functioning of the Maritime gas market, including data collection and data reporting.

There has been considerable interest in strengthening the links in the North American electric power grid since the United States has begun opening up its wholesale electric power markets. In 2002, the Board received four applications for IPL facilities.

Energy Market Information

The Board must have a thorough understanding of supply and markets in order to render decisions as an expert regulatory tribunal. Recognizing the existence of differences in regional market conditions, the Board, through its market analysis and monitoring efforts, assesses market issues facing Canadians. The Board uses this information to report to Canadians about the functioning of Canadian energy markets (mainly oil/NGL, natural gas and electricity) in order to help energy users and suppliers make decisions based on unbiased accurate information. The Board also monitors energy markets to ensure that Canadian energy users have access to Canadian energy on similar terms and conditions as are available to export buyers. In addition, the Board believes that Canadians should be informed about the operation of Canadian energy markets. For all of these reasons, the Board monitors energy markets and reports on market developments on an ongoing basis.

FIGURE 13
Eastern Export and Domestic Gas Price at the Alberta Border

The Board monitors the domestic price of Canadian-produced natural gas versus the price of natural gas exports. In an open competitive market, one would expect that the commodity price paid for natural gas, for example at the Alberta border, would be essentially the same for all gas buyers, whether domestic or foreign. Figure 13 shows that the prices paid by domestic and export buyers were, in fact, very close throughout 2002.

FIGURE 14
Light Crude Oil Export and Posted Price at Edmonton

With respect to crude oil, a similar relationship between domestic and export prices exists (Figure 14). This again demonstrates that Canadians have access to Canadian crude oil on price terms at least as favourable as export customers. The Board also monitors electricity markets, although this is somewhat more difficult due to the lack of functioning open markets in many parts of the country.

As part of its mandate, the Board monitors energy market activity and issues Energy Market Assessment (EMA) reports. These reports provide analyses of issues related to the major energy commodities. In 2002, the Board issued two EMA

reports, one on natural gas markets and the other on natural gas supply capability of the WCSB. The first was titled *Canadian Natural Gas Market Dynamics and Pricing: An Update* and was released in October. It examined the challenges that led to the unprecedented price volatility that was experienced over the winter of 2000/2001. The second, titled *Short-term Natural Gas Deliverability from the Western Canada Sedimentary Basin (WCSB) 2002-2004*, was released in December and focused on the outlook for production from the WCSB.

Every three to five years, the Board issues a long-term study of Canadian energy supply and demand. The Board is using a new approach in producing its upcoming supply and demand report. *Canada's Energy Future: Scenarios for Supply and Demand to 2025* uses scenarios to capture a broad range of plausible outcomes for future energy production and consumption patterns in Canada. The report will be published in early 2003.

The Board also compiles several statistical reports related to its regulatory role in the oil, gas and electricity industries. Data is compiled on a monthly basis and annual summaries, as far back as 1985, are available. Subject areas include: natural gas exports, imports, volumes and prices; exports of propane and butane; crude oil and petroleum product exports; light and heavy crude oil export prices; crude oil supply and disposition; and imports and exports of electricity. These reports are available on the Board's Internet site.

Regulatory Efficiency

While diligently fulfilling its responsibility to protect the public interest, the Board is mindful of industry's concerns regarding application cycle times and continuously reviews its processes for efficiency. The Board realizes that companies need clear regulatory requirements and dependable timelines. The Board ensures that its application processes are efficient by: engaging in dialogue with stakeholders; clarifying the Board's processes and expectations; implementing new approaches based on goal-oriented regulation; negotiating with other agencies to ensure that regulatory processes are harmonized to minimize duplication; and by pro-actively preparing for major applications.

The Board's *Section 58 Streamlining Order* permits companies to undertake, without applying for Board approval, certain routine facilities projects that have insignificant environmental impact, occur on company property, and do not result in safety or third party concerns. In 2001, companies spent $160 million on 932 projects that did not require applications to the Board. These projects represented a zero cycle time for the companies. A revised *Section 58 Streamlining Order* was issued in late 2002 to clarify the order, modify reporting requirements and exclude an increased number of routine projects from the Board's application process. A significant review and expansion of the order is anticipated in 2003 with the incorporation of the proposed new *Exclusion List Regulations* amendments under the CEA Act. In a related

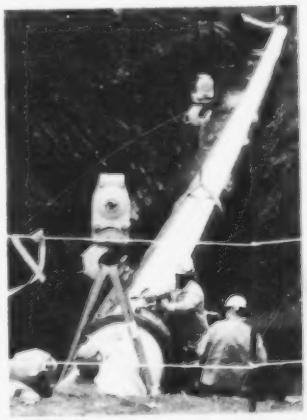
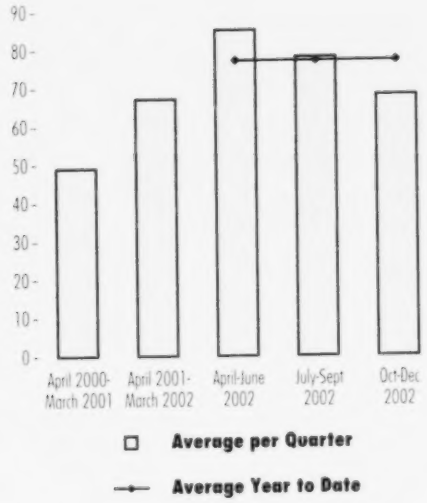


FIGURE 15
Cycle Times for all Non-Hearing Facility Applications by Quarter



initiative, the Board issued a letter to all companies in February 2002 clarifying that companies do not have to apply to undertake investigative digs and pipeline replacements. This resulted in further increases to regulatory efficiency for regulated companies. Through these and other initiatives, the Board has seen its Section 58 cycle times decrease over the course of the year (Figure 15).

The Board has initiated a project to conduct a comprehensive review and revision of its *Guidelines for Filing Requirements* (GFR). The GFR were developed to assist companies in their preparation of applications. Completion of the review is expected by the end of 2003. This review and the resulting modifications will ensure that the information contained in the GFR is clear, accurate and complete so that the Board's expectations are understood and can be applied consistently by applicants. It is expected that the final product will increase the completeness of applications resulting in a reduction of times for application reviews.

The Board continuously seeks out ways of improving the efficiency and effectiveness of its regulatory processes. In this regard, the Board proposed a new process to resolve disputes, namely the Appropriate Dispute Resolution (ADR) program. The goal of the ADR program is to provide flexibility to resolve some issues either within or outside the traditional regulatory process. Initial consultations about ADR opportunities and challenges took place with industry and the public during February and March 2002. Further comment was sought from September 2002 to February 2003 on the proposed design and content of the ADR program.

NEB's Expenditures and Financial Reporting

TABLE 9
Historical Expenditures and Staffing

Fiscal Year (April 1 to March 31)	Expenditures $000	Full-time Equivalents
1996 - 1997	26 855	272
1997 - 1998	28 048	264
1998 - 1999	53 187	277
1999 - 2000	26 900	286
2000 - 2001	26 216	289
2001 - 2002	28 836	281
2002 - 2003	31 910	287

The NEB's expenditures and staff levels for the last six fiscal years are shown in Table 9. Since 1991, up to 90 percent of the NEB's operating costs have been recovered from the regulated community. Additional information on budgets and plans may be found in the *NEB's 2002-2003 Main Estimates, Part II* and the *2002-2003 Estimates Part III - Report on Plans and Priorities*, both of which are available on the NEB's Internet site.

The NEB produces two sets of financial statements on an annual basis. One set is prepared on a fiscal year period ending March 31 using the accrual basis of accounting in accordance with Treasury

Board Accounting Standards and is based on generally accepted accounting principles (GAAP). This set of financial statements, which form part of the Public Accounts of Canada, consists of a Statement of Financial Position, Statement of Operations, Statement of Cash Flow and accompanying notes. The Office of the Auditor General determines when or if they will audit the NEB's Public Accounts financial statements in order to express an opinion on the consolidated statements of the Government of Canada.

The other set, for cost recovery purposes, is prepared on a calendar year period and has traditionally used a modified cash basis of accounting. This statement consists of a Statement of Expenditures and Receipts and includes expenditures and receipts recorded on a cash basis, except for goods and services provided by other government departments and agencies, which are estimates of expenditures paid by other government organizations, and the accompanying notes. This statement is audited by the Office of the Auditor General on an annual basis and is used as the basis for determining the costs recovered in accordance with the *National Energy Board Cost Recovery Regulations*. Plans are underway to move the basis of accounting for the cost recovery financial statement to an accrual basis in accordance with GAAP.

Further information on either set of financial statements can be obtained by contacting the NEB. The NEB Statement of Expenditures and Receipts can be located on the Board's Internet site at http://www.neb-one.gc.ca/pubs/index_e.htm. The consolidated financial statements for the Government of Canada can be found at http://www.pwgsc.gc.ca/recgen/text/pub-acc-e.html.

public engagement

The Board's goal with respect to public engagement is to be responsive to the changing needs of the public and proactive in identifying opportunities for stakeholders to become engaged in Board practices. This promotes and facilitates the Board's decision making process, which requires fairness (the right for interested parties to be heard) and completeness (to consider all possible evidence in order to make decisions in the public interest). To achieve this outcome, the Board needs to ensure that its culture is one that facilitates the engagement of stakeholders in its processes. The Board continually works toward providing open and accessible means for the public to share their views and to participate in Board matters.

Goal 4: The NEB meets the evolving needs of the public to engage in NEB matters.

The past year saw the Board embrace several new initiatives designed to meet the evolving needs of the public to engage in NEB matters. These included the first phase of a three-phase consultation plan for revising the *Guidelines for Filing Requirements* (GFR), extensive external consultation with regard to the upcoming *Supply and Demand Report*, further understanding in the area of developing effective Aboriginal Engagement opportunities, and the emergence of an Appropriate Dispute Resolution (ADR) program. The *Co-operation Plan*, another notable achievement in this area, was championed by the Board and outlines a co-ordinated effort in facilitating future pipeline applications from the North and public participation in the process.

Further evolution of Goal 4 resulted in a new indicator for measuring the Board's success in this area. In the future, the Board will strive to achieve "stakeholder satisfaction with NEB process, information and interaction." To achieve this end state, the Board works toward fulfilling the following objectives in the creation of its public engagement programs:

- Building Internal Capacity;
- Understanding Public Engagement Needs;
- Removing Barriers.

Building Internal Capacity

The Board believes in the importance of being a learning organization and promotes a shared learning process. It also believes in the importance of fostering a consultative culture. To this end, the Board provides skill enhancement opportunities to enable employees to undertake effective and appropriate public engagement. It also encourages internal consultation among teams and business units within the organization. As a result of these efforts, public engagement is quickly becoming a widely accepted operating practice within the Board.

Learning circles and hearing best practices

At the conclusion of Board projects and public hearings, employees come together to review their efforts and outcomes. These post-project findings are valuable and are applied to future initiatives. The result is increased efficiency and effectiveness of Board processes and engagement of the public in these processes.

Public engagement training

The Board provides employees with opportunities to further their skill set in specialized areas to better equip them to communicate with Canadians. Writing documents in plain language, determining inter-personal communication styles, and French and English language training were several in-house training initiatives that were offered to employees in 2002. The Board also sends employees to participate in the Annual International Association of Public Participation conference to gain additional ideas on public engagement practices.

Dealing with disputes

In 2002, the Board continued development of an Alternative Dispute Resolution program to provide stakeholders with an option for settling disputes in addition to the Board's traditional regulatory process. Board employees will be trained in many areas of providing this service, from awareness and application of this new option to acquiring mediation skills in order to facilitate stakeholder requests.

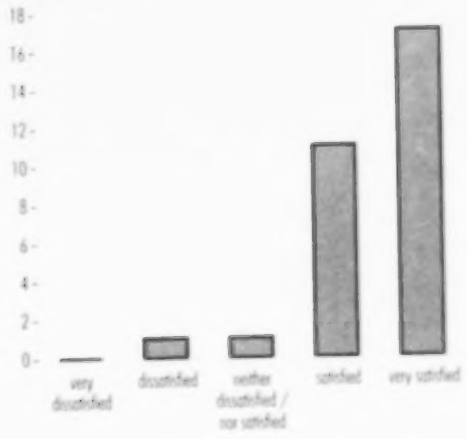
Diversified employee base

The Board works toward creating an employee base that is reflective of the Canadian population. This assists the Board in its ability to understand cultural differences, recognize the diverse needs of the Canadian public and assist in work within those communities. Currently, Board employees reflect more than 30 cultures (languages).

Developing new approaches

The Board is continually developing new approaches to deal with issues that come before it. Board decisions do not mean that for one request to be granted another has to be denied. One example of this is the Board's response to a hearing initiated by the Province of New Brunswick to establish new rules for short-term exports of incremental Scotian offshore natural gas. The Board decided that it was not appropriate to establish new rules. Instead, it mobilized a team of technical specialists to monitor the Maritime natural gas market and produce public reports in consultation with key players in the Maritime gas market and the public.

FIGURE 16
Past Hearing Survey Results 2002
Overall, how satisfied were you with your interaction with the NEB?



Understanding Public Engagement Needs

Understanding the public's concerns and their need to be consulted is paramount for the Board to be able to make informed decisions. Understanding how the public can and wants to be involved with the Board and its processes assists the Board in offering effective options in areas where the public is engaged. The Board uses the following practices to gain an understanding of the public's needs:

Feedback

The Board uses questionnaires as a primary tool to gather stakeholder feedback. Questionnaires are sent to individuals who have participated in Board activities to gauge their satisfaction with Board processes, information and their interaction with Board staff. In 2002, the Board sought feedback from participants of four hearings, as well as public consultation sessions, public information sessions, technical conferences and audit procedures. Results from hearings in 2002 indicated that, overall, most participants were satisfied or very satisfied with their interaction with the NEB (Figure 16). The Boa[illegible] address those areas of engagement that participants felt could be improved.

Engaging stakeholders in designing the process

The Board has added a multi-phased approach to several areas of consultation allowing interested parties to help determine the scope of projects and choose a preferred method of engagement. This approach was recently used on the Board's revision of its GFR.

Board Visits

Each year, Board Members travel to a different region in Canada to meet with local groups in order to come to a shared understanding of the role these groups have within Board processes. As well, the Board provides these groups with insight into its responsibility as a national regulator and engages meeting participants in two-way dialogue on current issues.

In 2002, Board Members visited Ontario to consult with parties who have an interest in Board matters. Approximately ten meetings were conducted over a five-day period. Members met with representatives of energy associations, institutes, landowners and industry groups, and other regulators.

The Board Members also traveled to Edmonton to meet with the Alberta Environmental Network (a network comprised of member committees and associations). In addition to clarifying mandates, roles, and updating current activities, discussion centered on the processes for reviewing northern pipeline proposals, export procedures and environmental issues, as well as public involvement.

Removing Barriers to Participation

The Board is conscious of, and tries to remove, anything that could be perceived as a barrier to participation in its processes. Barriers are deterrents that would hinder or discourage interested parties from becoming involved in the Board's activities. Eliminating barriers would include items such as making the hearing process unnecessarily complicated, less intimidating and more accessible to all interested parties. In 2002, the Board has:

- utilized a flexible hearing process as a result of consultation with interested parties. This includes holding hearings in more than one location and delivering decisions in areas where there was considerable public interest and involvement in an application;
- conducted public information sessions in the vicinity of future hearing locations to explain the Board's hearing process and the public's role in the process. These sessions took place prior to hearings related to Westcoast's Grizzly Raw Transmission System expansion project and its Southern Mainline expansion project, as well as the proposed GSX Canada Pipeline project;
- implemented a plain language standard and set of directives for all Board documents including a plain language template for Hearing Orders;
- looked into ways to streamline the hearing process and make it more efficient while providing more options for public participation;
- launched its e-filing service to provide efficiencies and accessibility in filing and viewing documents pertaining to regulatory matters;
- used the Internet site as a method of obtaining public comment on consultation documents for programs, reports and regulations; and
- worked on improving its Internet site and ensuring compliance toward Government On-Line standards. An accessibility audit was conducted and steps will be taken to ensure the site is accessible to all Canadians.

Involving Canadians

Early consultation has been used extensively throughout 2002 and has resulted in meaningful engagement with industry and non-industry stakeholders who are key to the development of Board initiatives. As well, Board hosted workshops focused on sharing information with the members of the public and industry, and to discuss issues of common interest.

Consultations

Supply and Demand Report – The Board is using a new approach in producing its upcoming report, *Canada's Energy Future: Scenarios for Supply and Demand to 2025* uses scenarios to capture a broad range of plausible outcomes for energy supply and demand in Canada. To help validate the information in the report, several series of consultations were conducted with industry. Public workshops will take place in January and February 2003 in six Canadian cities.

Damage Prevention Regulations – The Pipeline Damage Prevention Team has hosted focus groups and open houses across Canada to discuss the proposed *Damage Prevention Regulations*. Members of the public and industry provided feedback on the contents of the conceptual draft of the regulations. The new regulations will apply to pipeline companies as well as Canadians who own land crossed by a pipeline, or who undertake activities that could damage a pipeline.

Additional projects in which the Board sought public comment during development included the *Co-operation Plan for the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories* (June 2002), the Appropriate Dispute Resolution program and monitoring of the Maritime natural gas market.

Workshops

Pipeline Public Awareness Workshop – In June 2002, the NEB hosted its fourth workshop dedicated to sharing the pipeline industry's damage prevention and public awareness best practices. "Awareness 2002" was held in Halifax, Nova Scotia. It included a full day on continuing education and liaison programs, which relate primarily to informing the public and emergency responders of their roles in the event of a pipeline-related emergency. The workshop drew over 115 attendees.

Spring Workshop – This workshop was held in June in Calgary, Alberta. It focused on explaining and refining the Board's audit program, as well as refining various documents including the GFR, the proposed *Damage Prevention Regulations* and the draft *Guidance Notes for the Design, Construction, Operation and Abandonment of Pressure Vessels and Pressure Piping*. More than 200 stakeholders attended the Calgary workshop.

Reaching Canadians

Public Information Services

The Board employs a variety of communications tools to facilitate communication with targeted and broader publics. The Board believes that stakeholders should have access to quality information that is timely, relevant and easy to understand. The Board continually works toward improving its communication tools, adapting them to the changing needs of the public. Current communications tools include:

Internet site

The Board Internet site offers the public access to the Board's mandate, energy market assessment reports and general information publications, statistical information, and information on frontier lands, pipeline safety and tolls. Information pertaining to regulatory proceedings, including news releases, hearing orders, transcripts of public hearings, reasons for decisions and the monthly *Regulatory Agenda*, are also updated and posted on the Internet site.

In the past year, the Board has offered the public the option of providing comments electronically on projects such as regulation revisions and draft Energy Market Assessments.

News Releases

In 2002, the Board issued 46 news releases. The Board uses news releases to relay information pertaining to applications, public hearings, emerging publications as well as invitations to public consultations, workshops and information sessions. NEB news releases are distributed through a national newswire service. They are also posted on the Internet site and are available through the NEB library.

Regulatory Agenda

This "newsletter" provides the public with a one-stop source of the Board's monthly activities. It includes hearing and non-hearing applications, amendments to regulations and guidelines, administrative matters and general interest information. It is available through the Internet site and the Board library.

Information Series

The Board is continuing to update its publications to provide accurate, easy to understand and quality information for the public. This Information Series (previously known as Information Bulletins) will cover an array of topics that range from general information to a comprehensive landowners' guide.

In 2002, the Board published several information pieces including *Answers to your Questions; the National Energy Library and Information Services* and the *Frontier Information Office*.

Electronic filing (e-filing)

This year marked the launch of the Board's e-filing system "Livelink". Livelink allows the public the convenience of viewing regulatory documents as well as submitting documents electronically. This year more than 3 000 documents were filed with the Board, one-third of these using the Board's e-filing system.

Toll free number

The Board offers Canadians use of its toll-free number to facilitate personal interaction with Board staff in an effort to address specific needs or concerns. In 2002, more than 5 000 calls were received on the toll-free line, an increase of more than 1 200 calls from the previous year.

All calls, including those on the toll-free and the direct line, are an indication of the volume of interaction the Board has with stakeholders and members of the public on an annual basis.

a wealth of experience

As of 31 December 2002, Board membership consisted of seven full-time members who were appointed based upon their wide range of expertise in energy matters and public policy. Our multi-disciplinary team reflects the diverse perspectives and the practical knowledge required for making decisions on energy projects in the interests of Canadians and for advising the Government of Canada on energy issues. Members have private and public sector experience in economics, engineering, environment, finance, law, public participation, safety and science.

Kenneth W. Vollman

A native of Saskatchewan, Mr. Vollman has a Master's degree in Mechanical Engineering from the University of Saskatchewan and is a member of the Association of Professional Engineers of Alberta. Mr. Vollman has spent his career working in the energy sector, gaining his practical experience with oil and gas production while working in the private sector. During his career at the NEB, Mr. Vollman gained experience in energy supply and demand, pipelines, energy regulatory issues and management. In 1998, he was designated as Chairman after serving as a Member and Vice-Chairman. Over the past 35 years, Mr. Vollman has authored and presented numerous papers at Canadian and international conferences.

Jean-Paul Théorêt

A native of Quebec, Mr. Théorêt has a diverse educational and professional background in business, economics, law and energy regulation. Mr. Théorêt was a Commissioner of the Régie de l'énergie in Quebec for eight years. He was elected to the Quebec National Assembly in 1985 where he served as Parliamentary Assistant to the Minister of Industry, Trade and Technology as well as Vice Chairman of the Committee on Labour and the Economy. Mr. Théorêt has 30 years of business experience serving as an Executive Vice President of a large food distribution company and owner of food stores in Quebec. A member of the NEB since 1999, he was designated Vice-Chairman in 2002.

Judith A. Snider[1]

Ms. Snider holds a Bachelor of Laws degree from the University of Calgary and a Bachelor of Science degree (mathematics) from Carleton University. She has been a member of the Alberta bar since 1982.

Rowland J. Harrison

Originally from Australia, Mr. Harrison has a Master of Laws degree from the University of Alberta and is a member of the bars of Nova Scotia, Ontario and Alberta. He has gained extensive advisory, consulting and research experience in various aspects of energy regulation and policy during his career.

As a Professor of Law at various Canadian universities, Mr. Harrison taught Oil and Gas Law, Advanced Petroleum Law, Constitutional Law and Administrative Law. He has held senior management positions with a number of organizations including the Canada Oil and Gas Lands Administration, the Canadian Institute of Resources Law, the Institute for Research on Public Policy and the Dalhousie Institute of Environmental Studies. Most recently, he was a partner in the Calgary office of Stikeman Elliott, a national and international Canadian law firm.

John S. Bulger

Originally from Manitoba, Dr. Bulger has a Ph.D. in Physical Chemistry from York University in Toronto, as well as a Graduate Management Diploma from McGill University in Montreal. He has experience in procurement, operations, planning, regulatory affairs and providing advice on energy issues. Prior to being appointed to the Board, he held the position of Senior Manager, Regulatory Affairs at Maritimes and Northeast Pipeline in Halifax, Nova Scotia. He also spent almost 20 years at Gaz Métropolitain in various senior management positions. He began his career at DuPont of Canada Ltd. Dr. Bulger is a member of the Chemical Institute of Canada.

1 Ms. Snider was appointed a Judge of the Federal Court of Canada, Trial Division, in October 2002 and resigned from the Board at that time.

Elizabeth (Liz) Quarshie

Originally from Ghana, Ms. Quarshie has a Master's Degree in Environmental Engineering from Washington State University. She is a member of the Association of Professional Engineers and Geoscientists of Saskatchewan and is a Certified Professional Environmental Auditor.

Ms. Quarshie has more than 15 years experience in the energy sector and has held a portfolio of senior management positions at Cogema Resources Inc. and Cameco in Saskatoon, and directed programs such as occupational health and safety, environmental impact assessments, compliance and public affairs. She has extensive industry experience in project planning and design, development, implementation, monitoring and decommissioning. Ms. Quarshie also has experience in radiation protection, air pollution control, solid and hazardous waste management, water and wastewater treatment, research and evaluation, environmental management systems, audits and community development.

Deborah W. Emes

Originally from Saskatchewan, Ms. Emes has a Master of Arts in Economics from the University of Calgary and is a Chartered Financial Analyst. She has practical and academic expertise in providing regulatory, economic and market advice. Ms. Emes has held positions in the public and private sectors, including Manager, Strategic Services for the British Columbia Utilities Commission. She has taught rate design and cost of capital training seminars for the Canadian Association of Members of Public Utility Tribunals.

Carmen L. Dybwad

A native of Saskatchewan, Dr. Dybwad has a Ph.D. in Regional Planning and Resource Development from the University of Waterloo. She has an educational background in economics as well as practical and academic expertise in public participation, resource development and the electricity sector. Dr. Dybwad has held several positions with the Government of Saskatchewan and the Saskatchewan Power Corporation, including Manager of Environmental Policy and Planning. Most recently, she was an assistant professor at the University of Regina where she taught classes in ecological economics, sustainable development and public administration.

Bryan Williams

On 18 September 2001, the Honourable Bryan Williams was appointed as a temporary Board Member for the purpose of matters related to the Joint Panel Review of the GSX Canada Pipeline Project.

Gaétan Caron

In 2002, Mr. Caron was appointed as a temporary Board Member for a term of two years. Originally from Quebec, Mr. Caron obtained his Bachelor of Applied Sciences degree from Laval University and his Master of Business Administration degree from the University of Ottawa. Mr. Caron joined the NEB in 1979, where he has held several senior positions, most recently as Chief Operating Officer, a position he continues to occupy. Mr. Caron is a member of the Association of Professional Executives of the Public Service of Canada and is a member of the Quebec Order of Engineers. He is also a member of the Board of Directors of the Calgary United Way.

supplement i

Acts

National Energy Board Act
Canada Labour Code, Part II
Canada Oil and Gas Operations Act
Canada Petroleum Resources Act
Canadian Environmental Assessment Act
Energy Administration Act
Mackenzie Valley Resource Management Act
Northern Pipeline Act

Regulations and Orders Pursuant to the National Energy Board Act

Gas Pipeline Uniform Accounting Regulations
National Energy Board Act Part VI (Oil and Gas) Regulations
National Energy Board Cost Recovery Regulations
National Energy Board Electricity Regulations
National Energy Board Export and Import Reporting Regulations
National Energy Board Order No. MO-62-69
National Energy Board Pipeline Crossing Regulations, Part I
National Energy Board Pipeline Crossing Regulations, Part II
General Order No. 1 Respecting Standard Conditions for Crossings by Pipelines
General Order No. 2 Respecting Standard Conditions for Crossings of Pipelines
National Energy Board Rules of Practice and Procedure, 1995
National Energy Board Substituted Service Regulations
Oil Pipeline Uniform Accounting Regulations
Oil Product Designation Regulations
Onshore Pipeline Regulations, 1999
Pipeline Arbitration Committee Procedure Rules, 1986
Power Line Crossing Regulations
Proclamation Extending the Application of Part VI of the Act to Oil (May 7, 1970)
Regulations amending the *National Energy Board Cost Recovery Regulations* (SOR/2002-373)
21 October 2002
Toll Information Regulations
Section 58 Streamlining Order XG/XO-100-2002

Guidelines and Memoranda of Guidance pursuant to the National Energy Board Act

Adherence to Environmental Information Requirements under the Board's Guidelines for Filing Requirements (23 December 1997)

Consultation with Aboriginal Peoples: National Energy Board Memorandum of Guidance, (4 March 2002)

Filing of Supply Information in Compliance with the Board's Part VI (Oil and Gas) Regulations (16 May 1997)

Filing Procedures for Section 104 Right of Entry Order Applications (27 October 1999)

Financial Regulatory Audit Policy of the National Energy Board (23 February 1999)

Guidance Notes for the *Onshore Pipeline Regulations*, 1999 (7 September 1999)

Guidelines for Filing Requirements (22 February 1995)

Guidelines for Negotiated Settlement of Traffic, Tolls and Tariffs (12 June 2002)

Guidelines Respecting the Environmental Information to be Filed by Applicants for Authorization to Construct and Operate Gas Processing and Straddle Plants, Liquid Natural Gas (LNG) Plants and Terminals, Natural Gas Liquids (NGL), Liquid Propane Gas (LPG) and Butane Plants and Terminals, under Part III of the *National Energy Board Act* (26 June 1986)

Investigative Digs and Related Pipeline Repairs/Replacements (2 December 2002)

Memorandum of Guidance - Electronic Filing, *National Energy Board Rules of Practice and Procedure*, 1995 (21 March 2002)

Memorandum of Guidance - Concerning Full Implementation of the September 1988 Canadian Electricity Policy (Revised 26 August 1998)

Memorandum of Guidance - Fair Market Access Procedure for the Licensing of Long-term Exports of Crude Oil and Equivalent (17 December 1997)

Memorandum of Guidance - Regulation of Group 2 Companies (6 December 1995)

Memorandum of Guidance - Retention of Accounting Records by Group 1 Companies Pursuant to Gas/Oil Pipeline Uniform Accounting Regulations (30 November 1994)

Memorandum of Guidance - Financial Information Submitted to the National Energy Board by Group 1 Pipeline Companies (6 December 2001)

National Energy Board Expected Elements for Emergency Preparedness and Response Programs (24 April 2002)

Performance Measures filed as part of Year-end Quarterly Surveillance Reports (26 January 1996)

Regulations Pursuant to the Canada Oil and Gas Operations Act

Canada Oil and Gas Certificate of Fitness Regulations

Canada Oil and Gas Diving Regulations

Canada Oil and Gas Drilling Regulations

Canada Oil and Gas Geophysical Operations Regulations

Canada Oil and Gas Installations Regulations

Canada Oil and Gas Operations Regulations
Canada Oil and Gas Production and Conservation Regulations
Oil and Gas Spills and Debris Liability Regulations

Guidelines and Guidance Notes pursuant to the Canada Oil and Gas Operations Act

Guidance Notes for Applicant - Applications for Declaration of Significant Discovery and Commercial Discovery
Guidance Notes for the *Canada Oil and Gas Drilling Regulations*
Guidance Notes for the *Canada Oil and Gas Diving Regulations*
Guidelines Respecting Physical Environmental Programs During Petroleum Drilling and Production Activities on Frontier Lands
Offshore Waste Treatment Guidelines

Regulations Pursuant to the Canada Petroleum Resources Act

Frontier Lands Petroleum Royalty Regulations
Frontier Lands Registration Regulations

Regulations Pursuant to the Canadian Environmental Assessment Act

Comprehensive Study List Regulations
Exclusion List Regulations
Federal Authorities Regulations
Inclusion List Regulations
Law List Regulations
Projects Outside Canada Environmental Assessment Regulations
Regulations Respecting the Co-ordination by Federal Authorities of Environmental Assessment Procedures and Requirements

Regulations Pursuant to the Canada Labour Code, Part II

Oil and Gas Occupational Safety and Health Regulations
Safety and Health Committees and Representatives Regulations
Canada Occupational Safety and Health Regulations

Regulations Pursuant to the Mackenzie Valley Resources Management Act

Exemption List Regulations
Mackenzie Valley Land Use Regulations
Preliminary Screening Requirement Regulations

Regulations Pursuant to the Northern Pipeline Act

Northern Pipeline Notice of Objection Regulations

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Northern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Alberta

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Province of Saskatchewan

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for Southern British Columbia

Northern Pipeline Socio-Economic and Environmental Terms and Conditions for the Swift River Portion of the Pipeline in the Province of British Columbia

Order Designating the Minister for International Trade as Minister for Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of Certain Ministers Under Certain Acts to the Member of the Queen's Privy Council for Canada Designated as Minister for Purposes of the Act

Transfer of Duties, in Relation to the Pipeline, of the National Energy Board Under Parts I, II and III of the *Gas Pipeline Regulations* to the Designated Minister for Purposes of the Act

Transfer of Powers, Duties and Functions (Kluane National Park Reserve Lands) Order

Transfer of Powers, Duties and Functions (Territorial Lands) Order

Regulations Pursuant to the Territorial Lands Act

Canada Oil and Gas Land Regulations

supplement ii

Companies Regulated by the NEB

The following pipeline companies and electric power entities own or operate interprovincial or international pipelines or power lines under the NEB's jurisdiction, as of 31 December 2002. The pipeline companies have been divided into two groups. Group 1 gas and oil pipelines are the major pipeline companies subject to active regulatory oversight by the NEB. Group 2 consists of all other pipeline companies under the NEB's jurisdiction.

For purposes of cost recovery, there are three classifications for companies: large, intermediate and small. The criteria for determining a company's classification are based on its size, throughput, and cost of service.

Group 1 Gas Pipelines

Alliance Pipeline Ltd.
Foothills Pipe Lines Ltd.
Gazoduc Trans Québec & Maritimes Inc.
Maritimes and Northeast Pipeline Management Ltd.
TransCanada PipeLines Limited
TransCanada PipeLines Limited, B.C. System
Westcoast Energy Inc.

Group 1 Oil and Products Pipelines

Cochin Pipe Lines Ltd.
Enbridge Pipelines Inc.
Enbridge Pipelines (NW) Inc.
Terasen Pipelines (Trans Mountain) Inc.
Trans-Northern Pipelines Inc.

Group 2 Gas Pipelines

AltaGas (Sask) Inc.
AltaGas Services Inc.
AltaGas Transmission Ltd.
ANG Gathering & Processing Ltd.
Barrington Petroleum Ltd.
Bear Paw Processing Company (Canada) Ltd.
Bellator Exploration Inc.
Berkley Petroleum Corp.
Canada Customs and Revenue Agency
Canadian Hunter Exploration Ltd.
Canadian-Montana Pipe Line Corporation
Canadian Natural Resources Limited
Centra Transmission Holdings Inc.
Champion Pipeline Corporation Limited
Chief Mountain Gas Co-op Ltd.
DEFS Canada L.P.
Devon Energy Canada Corporation
ELAN Energy Inc.
Enbridge Gas Distribution Inc.
EnCana Border Pipelines Limited
EnCana Corporation
EnCana Oil & Gas Partnership
EnCana Suffield Gas Pipeline Inc.
EnCana West Ltd.
ExxonMobil Canada Ltd.
Fletcher Challenge Oil and Gas Inc.
Forty Miles Gas Co-op Ltd.
Gibson Petroleum Company Limited

Huntingdon International Pipeline Corporation
Husky Oil Operations Ltd.
KeySpan Energy Canada Inc.
Many Islands Pipe Lines (Canada) Limited
Mid-Continent Pipelines Limited
Minell Pipeline Limited
Murphy Canada Exploration Company
Murphy Oil Company Ltd.
Niagara Gas Transmission Limited
Northstar Energy Corporation
Olympia Energy Inc.
Peace River Transmission Company Limited
Penn West Petroleum Ltd.
Pioneer Natural Resources Canada Inc.
Portal Municipal Gas Company Canada Inc.
Rigel Oil and Gas Ltd.
St. Clair Pipelines Management Inc.
Samson Canada Ltd.
SCL Pipeline Inc.
Shell Canada Products Limited
Shiha Energy Transmission Ltd.
Star Oil and Gas Ltd.
Suncor Energy Inc.
Talisman Energy Inc.
Taurus Exploration
Union Gas Limited
Vector Pipeline Limited Partnership
Westminster Resources Ltd.
167496 Canada Ltd.

Group 2 Oil and Products

Aurora Pipe Line Company
BP Canada Energy Company
ConocoPhillips Canada Limited
Dome Kerrobert Pipeline Ltd.
Dome NGL Pipeline Ltd.
Enbridge Pipelines (Westspur) Inc.
Ethane Shippers Joint Venture
Express Pipeline Limited Partnership
Genesis Pipeline (Canada) Ltd.
Husky Energy Inc.
Husky Oil Operations Ltd.
Imperial Oil Resources Limited
ISH Energy Ltd.
Manito Pipelines Ltd.
Montreal Pipe Line Limited
Murphy Oil Company Ltd.
Nexen Marketing
NOVA Chemicals (Canada) Ltd.
PanCanadian Kerrobert Pipeline Ltd.
Paramount Transmission Ltd.
Pembina Pipeline Corporation
Penn West Petroleum Ltd.
Plains Marketing Canada, L.P.
PMC (Nova Scotia) Company
Pouce Coupé Pipe Line Ltd. as an agent and general partner of Pembina North Limited Partnership
PrimeWest Energy Inc.
SCL Pipeline Inc.
Sun-Canadian Pipe Line Company Limited
Sunoco Pipeline L.P.
Williams Energy (Canada), Inc.
Yukon Pipelines Limited

Commodity Pipelines

Abitibi-Consolidated Company of Canada
E.B. Eddy Forest Products Ltd.
Fraser Paper Inc. (Canada)
Genesis Pipeline Canada Ltd.
Penn West Petroleum Ltd.
Souris Valley Pipeline Limited

Electric Power Utilities

Abitibi-Consolidated Inc.
Advantage Energy Inc.
Aquila Merchant Services
Aquila Networks Canada (BC) Ltd.
ATCO Electric Ltd. and ATCO Power Ltd.
Bonneville Power Administration
BP Canada Energy Company
British Columbia Hydro and Power Authority
Canadian Niagara Power Company Limited
Canadian Niagara Power Inc.
The Canadian Transit Company
Candela Energy Corporation

Cargill-Alliant Energy Canada Inc.
Cedars Rapids Transmission Co.
Chandler Energy Inc.
CMS Marketing, Services and Trading Company
Columbia Power Corporation
Conectiv Energy Supply Inc.
Constellation Power Source, Inc.
Consumers Energy Company
Coral Energy Canada Inc.
Detroit & Canada Tunnel Corporation
The Detroit & Windsor Subway Company
The Detroit Edison Company
Direct Energy Marketing Limited
DTE Energy Trading Inc.
Duke Energy Marketing Canada Ltd.
Dynegy Canada Inc.
Dynegy Power Marketing Inc.
Edison Mission Marketing & Trading, Inc.
El Paso Merchant Energy, L.P.
Emera Energy Inc.
EnCana Energy Services Inc.
Engage Energy Canada, L.P.
Engage Energy US, L.P.
ENMAX Energy Marketing Inc.
Entergy Power Marketing Corp.
Entergy-Koch Trading Canada (ULC)
EPCOR Merchant and Capital Inc.
Exelon Generation Company, LLC
Farms (including cottage and isolated loads)
Fraser Paper Inc. (Canada)
Hydro One Networks Inc.
Hydro-Québec
IDACORP Energy L.P.
Independent Electricity Market Operator
Inland Pacific Energy Services Ltd.
Lac La Croix Power Authority
Manitoba Hydro
Marketing D'Énergie HQ Inc.
Mirant Americas Energy Marketing, L.P.
Montwegan International Energia Resorce Inc.
Morgan Stanley Capital Group Inc.
New Brunswick Power Corporation
Nexen Marketing
NorthPoint Energy Solutions Inc.
Nova Scotia Power Inc.
NRG Power Marketing, Inc.
OGE Energy Resources Inc.
Ontario Power Generation Inc.
Ontario Power Interconnected Markets Inc.
PDI Canada Inc.
PG&E Energy Trading - Power L.P.
Powerex Corp.
Reliant Energy Services Canada Ltd.
Roseau Electric Cooperative Inc.
Saskatchewan Power Corporation
Sempra Energy Trading Corp.
Sonat Power Marketing Inc.
Sonat Power Marketing, L.P.
Split Rock Energy LLC
Teck Cominco Metals Ltd.
Tractebel Energy Marketing Inc.
TransAlta Energy Marketing Corp.
TransAlta Energy Marketing Corp. and TransAlta Energy Marketing (U.S.) Inc.
TransCanada Energy Ltd.
TransCanada Power Marketing Inc.
UBS AG, London Branch
UtiliCorp Networks Canada (British Columbia) Ltd.
West Kootenay Power Ltd.
Williams Energy Marketing & Trading Canada Inc.
WPS Canada Generation, Inc.

supplement iii

Documents

Information Bulletins

The Board publishes Information Bulletins on the subjects listed below:

I. Pipeline Route Approval Procedures
II. The Public Hearing Process
III. Non-Hearing Procedures
IV. How to Participate in a Public Hearing
V. The Board's Publications (replaced by Information Series #2)
VI. Traffic, Tolls and Tariffs
VII. The National Energy Board Library (replaced by Information Series #2)
VIII. Electricity
IX. Protection of the Environment
X. Pipeline Tolls and Tariffs: A Compendium of Terms
XI. The Frontier Information Office (replaced by Information Series #3)
XII. Pipeline Safety
XIII. Pipeline Regulation: An Overview for Landowners and Tenants

The Board also publishes the following brochures:

Living and Working Near Pipelines - Landowner Guide 2002
Excavation and Construction Near Pipelines, January 2002

Information Series

The Board publishes the following Information Series:

1. Answers to your Questions
2. Library and Information Services
3. Frontier Information Office

Major Documents Published in 2002

International Power Lines

Manitoba Hydro Electric Board
Authorization to construct and operate an international power line
Decision, 6 March 2002

Cedars Rapids Transmission Co.
Authorization to reconstruct a section of its existing international powerline
EH-1-2002
Reasons for Decision, June 2002

Pipeline Facilities

TransCanada PipeLines Limited
Facilitator's Report of Technical Conference, 7 February 2002
Facilities Deactivation Application
Section 44 of the *Onshore Pipeline Regulations*,

Georgia Strait Crossing Pipeline Limited
GSX Canada pipeline project
Oral argument on motion
GH-4-2001
Decision, 31 May 2002

Canadian Natural Resources Limited
CNRL Ladyfern Pipeline
Decision, 18 december 2001
Statement of Dissent - Member E. Quarshie, 13 June 2002

Westcoast Energy Inc.
Grizzly extension pipeline and Weejay lateral
GH-2-2002
Comprehensive Study Report, August 2002

Westcoast Energy Inc.
Grizzly extension pipeline and the Weejay lateral
GH-2-2002
Reasons for Decision, November 2002

Tolls and Tariffs

TransCanada PipeLines Limited
Fair return application
RH-4-2001
Reasons for Decision, June 2002

Gas Exports

Province of New Brunswick
Respecting short-term export order procedures
MH-2-2002
Reasons for Decision, September 2002

Electricity

TransCanada Power Marketing Inc.
Electricity Export
Letter Decision, 8 March 2002

EPCOR Merchant and Capital Inc. on behalf of EPCOR Merchant and Capital L.P.
Electricity Export
Letter Decision, 18 March 2002

Nexen Marketing
Electricity Export
Letter Decision, 18 March 2002

Aquila Capital and Trade Limited
Electricity Export
Letter Decision, 21 March 2002

Aquila Canada Capital and Trade Corp.
Electricity Export
Letter Decision, 21 March 2002

OGE Energy Resources, Inc.
Electricity Export
Letter Decision, 5 April 2002

Direct Energy Marketing Limited
Electricity Export
Letter Decision, 12 April 2002

Reliant Energy Services Canada Ltd.
Electricity Export
Letter Decision, 12 April 2002

The Detroit Edison Company
Electricity Export
Letter Decision, 25 April 2002

DTE Energy Trading Inc.
Electricity Export
Letter Decision, 25 April 2002

Cargill-Alliant Energy Canada, Inc.
the general partner of Cargill-Alliant Energy Canada, LP
Electricity Export
Letter Decision, 2 May 2002

supplement iv

Legal Proceedings

1. *Geophysical Services Incorporated v. The Chairman, National Energy Board and Information Commissioner of Canada*

Federal Court Trial Division

In November of 2000, the Board was served with a judicial review application with respect to a denial pursuant to an Access to Information request. The judicial review application stated that the Board erred in concluding that the disclosure of the information requested could reasonably be expected to result in material financial loss, or prejudice the competitive position of a third party.

Decision: This matter has been set down to be heard in Halifax, Nova Scotia on 5 February 2003.

2. *Federation of Saskatchewan Indian Nations; The Chiefs of Treaty No. 4 and Treaty No. 8 (FSIN) v. Alliance Pipelines Ltd.*

Federal Court of Appeal

On 2 May 2001, FSIN brought an application for judicial review of the NEB's decision of 2 April 2001 to deny FSIN's request that the Board convene a hearing to consider revocation or suspension of the Certificate of Public Convenience and Necessity (GC-98) issued to Alliance. FSIN claimed that Alliance had contravened a term or condition of the certificate.

On 16 April 2002, the Federal Court of Appeal granted a motion by FSIN to amend its application for judicial review. The amendment added a request for judicial review of the NEB's decision of 23 November 1998 (approved by the Governor in Council on 23 December 1998) to grant GC-98. The grounds for the added request included that the NEB failed to properly exercise its jurisdiction by issuing GC-98 without including revenue sharing as a term of GC-98 as mentioned in a Memorandum of Understanding between FSIN and Alliance.

Decision: As of 31 December 2002, this matter had yet to be set down for hearing.

3. *Maritimes & Northeast Pipeline Management Ltd. (M&NP) v. National Energy Board*

Federal Court of Appeal

On 14 February 2002, M&NP brought an application for leave to appeal the NEB's decision of 15 January 2002 to set down for public hearing a request by Cartier Pipeline and Company, Limited Partnership (Cartier). By Hearing Order RH-3-2001, Phase 2, the Board set down for consideration the appropriate toll treatment of the Northwest Facilities. The Northwest

Facilities consist of a hypothetical pipeline approximately 260 kilometers in length extending from an interconnection with the proposed Cartier Pipeline Project through north-west New Brunswick to M&NP's existing mainline near Fredericton.

The grounds for the application for leave to appeal included assertion that the Board erred in directing a hearing for the determination of tolling methodology for facilities for which no application to construct had been filed with the Board and in purporting to exclude certain matters from consideration at the hearing.

Decision: On 22 February 2002, following withdrawal of the Cartier request for hearing and the Board's resultant termination of the RH-3-2001 Phase 2 proceeding, M&NP discontinued its application for leave to appeal.

4. Canadian Association of Petroleum Producers (CAPP) - Hearing Order RH-3-2001 Phase 2, Regarding Cartier Request for Tolling Determination [for the Northwest Facilities]

Review by NEB

On 28 January 2002, CAPP applied for a review and stay of the Board's decision of 15 January 2002 to set down for public hearing a request by Cartier for the Board's consideration of the appropriate toll treatment of the Northwest Facilities (the facilities are described in item 3 above).

Decision: On 21 February 2002, following withdrawal of the Cartier request for hearing and the Board's resultant termination of the RH-3-2001 Phase 2 proceeding, the Board discontinued its consideration of the review application.

5. Westcoast Energy Inc. - Order approving construction of the Kwoen Facilities

Review by NEB

On 27 September 2001, the Board decided, on its own motion, to conduct a review of its order approving the construction of Westcoast's Kwoen facilities. On 19 September 2001, Westcoast had informed the Board that it had identified problems with Talisman Energy Inc.'s re-injection well located at b-65-B/93-p-5 (b-65 well) and that the connection of the Kwoen facilities as approved by XG-W005-22-2001 to the b-65 well appeared to be in serious doubt. The Board noted that the b-65 well is fundamental to the operation of the Kwoen facilities as approved. In the absence of a connection between the Kwoen re-injection pipeline and the b-65 well, the viability of the Kwoen project and other projects related to it may be in question.

Decision: On 19 April 2002, the Board completed its review by amending the original order, which effectively approved the facilities.

6. *Reservoir Safety Committee (RSC) - Review of Electricity Export Permits Issued to British Columbia Power Exchange Corporation (Powerex) and British Columbia Hydro and Power Authority (BC Hydro)*

Review by NEB

On 17 October 2000, RSC applied for a review of electricity export permits EPE-118 and EPE-119 issued to Powerex and permits EPE-124, EPE-125, EPE-126 and EPE-127 issued to BC Hydro. In its application, RSC stated that since 1980, 11 drownings had occurred in BC Hydro's Carpenter Reservoir, which supplies the Bridge River Hydroelectric Facility, as a consequence of BC Hydro's refusal to provide adequate protection to workers and members of the public travelling near the reservoir. RSC requested that the Board rescind permits related to the export of electricity generated through the Bridge River Facility until such time as the safety of workers and the traveling public can be assured. In December of 2001, the Board advised RSC that it would not consider the application for review until RSC had notified interested parties of the application.

In April of 2002, RSC renewed its application for a review of these permits and notified interested parties. On 10 June 2002, the Board sought submissions from BC Hydro and Powerex on the Board's authority under subsection 21(1) of the *National Energy Board Act* to rescind electricity export permits. On 24 June 2002, BC Hydro and Powerex responded, in part, with a request that the Board conclude that it has no jurisdiction to grant RSC the relief it sought.

Decision: On 7 August 2002, RSC informed the Board that it did not wish to pursue its application for the rescission of the electricity export permits currently held by BC Hydro and Powerex.

7. *Trans Mountain Pipe Line Company Ltd. (TMPL) - Order Approving Toll Settlement*

Review by NEB

On 19 March 2002, TMPL applied for review and variance of Order TO-1-2001 by which the Board approved TMPL's Incentive Toll Settlement for the years 2001 to 2005. The review application was filed because of the company's understanding that condition 6 of the Order required TMPL to immediately comply with the revised surveillance reporting requirements of Part XI of the Guidelines for Filing Requirements issued by the Board on 6 December 2001. Condition 6 of the Order provided as follows:

TMPL is relieved from all reporting and filing requirements pursuant to Order TO-3-92 and the Memorandum of Guidance dated 16 February, related to quarterly surveillance reports pending the outcome of the Board's examination of appropriate filing requirements for pipeline[s] operating under an incentive toll settlement.

Decision: On 31 May 2002, the Board dismissed the application for review and variance on the basis that the Board had not made an interpretation of condition 6 of the Order which would require immediate compliance with the revised surveillance reporting requirements.

Review by NEB

On 16 September 2002, TransCanada applied to the Board for a review and variance of Board decision RH-4-2001 and the implementing orders. TransCanada claimed that the Board committed errors in the RH-4-2001 Decision when it:

- breached its legal obligation to apply the fair return standard;
- improperly applied the comparable investment, capital attraction and financial integrity standards;
- misinterpreted the ATWACC proposal;
- continued the application of the RH-2-94 Formula for determination of return on equity;
- violated the stand-alone principle; and
- breached the duty of fairness by failing to provide adequate reasons for many of its decisions.

On 1 November 2002, the Board solicited comments from the parties to RH-4-2001 on whether or not TransCanada has raised a doubt as to the correctness of the Decision which would require a review. The filing of documents, including TransCanada's reply, was completed by 17 December 2002.

Decision: The matter remains under Board consideration.

supplement v

Co-operation with Other Organizations

The NEB co-operates with other agencies to reduce regulatory overlap and provide more efficient regulatory services.

Alberta Energy and Utilities Board (EUB)

The NEB has a Memorandum of Understanding (MOU) with the EUB on Pipeline Incident Response. The agreement provides for mutual assistance and a faster and more effective response by both boards to pipeline incidents in Alberta.

The NEB and the EUB maintained their commitment to using the common reserves database for oil and gas reserves in Alberta. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation. Currently the Boards are working on a new assessment of gas resources in Alberta. The NEB and the EUB are organizing and planning to jointly host the 2003 CAMPUT conference "Market in Transition - The Changing Face of Regulation" (see CAMPUT below).

British Columbia Ministry of Energy and Mines (BCMEM)

The NEB and BCMEM maintained their commitment to using a common reserves database for oil and gas reserves in British Columbia. Both boards are committed to developing more efficient methods for maintaining estimates of reserves and to exploring other opportunities for co-operation.

Canada-Newfoundland Offshore Petroleum Board (C-NOPB) and Canada-Nova Scotia Offshore Petroleum Board (C-NSOPB)

The Chairs of the NEB, the C-NOPB and the C-NSOPB, together with executives from the Newfoundland, Labrador and Nova Scotia Departments of Energy and NRCan, form the Oil and Gas Administrators Advisory Council (OGAAC). The OGAAC membership discuss and decide on horizontal issues affecting their respective organizations to ensure convergence and collaboration on oil and gas exploration and production issues across Canada. The NEB, C-NOPB and C-NSOPB staff also work together to review, update and amend regulations and guidelines affecting oil and gas activities on Accord Lands.

NEB staff also provides technical expertise to NRCan, C-NOPB and C-NSOPB on technical matters of mutual interest, such as reservoir assessment, occupational safety and health, diving, drilling and production activities.

In 2002, the NEB and C-NSOPB signed an MOU to co-ordinate the regulatory review of the EnCana Deep Panuke Offshore Gas Development project.

Canadian Association of Members of Public Utility Tribunals (CAMPUT)

CAMPUT is a non-profit organization of federal, provincial and territorial boards and commissions which are responsible for the regulation of the electric, water, gas and pipeline utilities in Canada. Members sit on the executive committee of the association, promoting the education and training of members and staff of public utility tribunals. The NEB also provides staff support to CAMPUT in the form of information provision and assistance in conference organization. During 2002, NEB Board Members and staff attended the Annual CAMPUT conference.

Canadian Environmental Assessment Agency (CEAA)

NEB staff is actively engaged with CEAA matters, participating in CEAA's Senior Management Committee and acting as an observer on the Regulatory Advisory Committee. This involvement ensures effective co-ordination of regulatory responsibilities relating to environmental assessments.

Comisión Reguladora de Energía (CRE) of Mexico

Staff at the NEB and CRE maintain an ongoing informal relationship, sharing regulatory experiences and information on North American energy markets. Both organizations are committed to continuing and strengthening this relationship, which includes inter-agency staff visits.

Co-operation on the Environmental Impact Assessment and Regulatory Review of a Northern Gas Pipeline Project through the Northwest Territories

In 2002, the NEB, in collaboration with the boards and agencies responsible for environmental impact assessment and regulatory review of a major natural gas pipeline through the Northwest Territories, issued a Co-operation Plan. This plan describes how the agencies propose to co-ordinate their activities to ensure an efficient, flexible and timely process that reduces duplication and enhances public and northern participation in the review of a major pipeline application. The NEB's partners in the Plan include the Mackenzie Valley Land and Water Board, the Sahtu and Gwich'in Land and Water Boards, the NWT Water Board, the Mackenzie Valley Environmental Impact Review Board, the Environmental Impact Screening Committee and the Environmental Impact Review Board for the Inuvialuit Settlement Region, the Inuvialuit Game Council, the Inuvialuit Land Administration, the Canadian Environmental Assessment Agency, the Department of Indian Affairs and Northern Development, and observers from the Deh Cho First Nation, the Government of the Northwest Territories, and the Government of Yukon.

Human Resources Development Canada (HRDC)

The NEB has an MOU with HRDC to administer the *Canada Labour Code* for NEB-regulated facilities and activities and to co-ordinate these safety responsibilities under the COGO Act and the NEB Act. The NEB also participated in the HRDC client satisfaction survey.

Mackenzie Valley Environmental Impact Review Board (MVEIRB)

In late 2000, the NEB and the MVEIRB signed a joint MOU to establish a co-operative framework for environmental impact assessment in the Mackenzie Valley. In the case of transboundary pipeline projects, the NEB has responsibilities under both the *Mackenzie Valley Resource Management Act* and the CEA Act. This MOU facilitates the co-operation of two boards to reduce duplication and increase effectiveness of the environmental review process.

National Association of Regulatory Utility Commissioners (NARUC)

Board Members regularly participate in meetings of the U.S. NARUC, particularly with respect to developments in U.S. gas markets that may affect cross-border trade in natural gas.

Natural Resources Canada (NRCan)

In 1996, the NEB signed an MOU with NRCan to reduce duplication and increase co-operation between the agencies. This MOU covers items such as data collection, the enhancement of energy models and special studies. The MOU was renewed in January 2000.

Northern Pipeline Agency (NPA)

The NEB provides technical and administrative assistance to the NPA, which, under the Northern Pipeline Act, has primary responsibility for overseeing the planning and construction of the Canadian portion of the Alaska Natural Gas Transportation System by Foothills Pipe Lines Ltd. Mr. Robert G. Skinner was appointed as the Administrator of the NPA in November 2002.

Pipeline Technical Regulatory Authorities of Canada Council (PTRACC)

The NEB chairs a staff committee of federal and provincial technical regulators. PTRACC meets regularly throughout the year to discuss pipeline safety and environmental initiatives.

Transportation Safety Board of Canada (TSB)

While the NEB has exclusive responsibility for regulating the safety of oil and gas pipelines under federal jurisdiction, it shares the responsibility for investigating pipeline incidents with the TSB. The roles and responsibilities of each body with regard to pipeline accident investigations are outlined in a MOU between the two boards.

U.S. Federal Energy Regulatory Commission (FERC)

NEB and FERC executives maintain a regular dialogue on their respective regulatory experiences and exchange information available in the public domain in order to keep one another informed about current and upcoming issues which may affect both organizations, and to mutually benefit from knowledge about best regulatory practices.

Yukon Territory Department of Economic Development (DED)

The NEB continues to work with Yukon officials to facilitate the transfer of oil and gas regulatory responsibilities in accordance with the Yukon Accord Implementation Agreement. The Board provides expert technical advice to the DED.

supplement vi

List of Appendices

The following Statistical Reports are published separately as Appendices to the Annual Report. Electronic copies can be found on the Board's Internet site and printed versions are available from the Publications Office. Call (403) 299-3562 or 1-800-899-1265, send a facsimile to (403) 292-5503 or visit the Board's Internet site (www.neb-one.gc.ca).

Appendix A

- A1 Crude Oil and Equivalent Supply and Disposition
- A2 Estimated Established Reserves of Crude Oil and Bitumen at 31 December 2001
- A3 Natural Gas Supply and Disposition
- A4 Estimated Established Reserves of Marketable Natural Gas at 31 December 2001
- A5 Natural Gas Liquids Supply and Disposition
- A6 Geophysical Activity
- A7 Exploration and Development Expenditures
- A8 Sales of Exploration Rights in Western Canada
- A9 Sales of Exploration Rights in Frontier Regions
- A10 Electricity Generation and Disposition

Appendix B

- B1 Certificates Issued During 2002 Approving Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length
- B2 Orders Issued During 2002 Approving Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length
- B3 Exports of Canadian Crude Oil and Equivalent - 2001 and 2002
- B4 Exports of Canadian Crude Oil and Equivalent - 1998 to 2002
- B5 Exports of Petroleum Products by Month - 2002
- B6 Exports of Petroleum Products by Company - 2001 and 2002

Appendix C

- C1 Certificates Issued During 2002 Approving the Construction of Gas Pipeline Facilities Exceeding 40 Kilometres in Length
- C2 Orders Issued During 2002 Approving the Construction of Gas Pipeline Facilities Not Exceeding 40 Kilometres in Length
- C3 Licences and Long-Term Orders to Export Natural Gas as of 31 December 2002
- C4 Licences and Long-Term Orders to Import Natural Gas as of 31 December 2002
- C5 Natural Gas Exports by Export Point - 1998 to 2002
- C6 Total Net Exports of Propane and Butanes - 2001 and 2002

Appendix D

D1 Financial Information - Group 1 Oil Pipeline Companies with Multi-Year Incentive Toll Agreements

D2 Financial Information - Group 1 Oil Pipeline Companies with Tolls based on Cost of Service

D3 Financial Information - Group 1 Gas Pipeline Companies

Appendix E

E1 Certificates and Permits Issued During 2002 for International Power Lines

E2 Amending Orders Issued During 2002 for International Power Lines

E3 Revoking Orders Issued During 2002 for International Power Lines

E4 Licences Issued During 2002 for the Export of Electricity

E5 Permits and Orders Issued During 2002 for the Export of Electricity

E6 Electricity Exports - 2002

E7 Electricity Trade Between Canada and the United States - 2002 (by Province)

E8 Electricity Trade between the United States and Canada - 2002 (by American Region/State)

supplement vii

NEB Organization

The NEB is structured into five business units, reflecting major areas of responsibility: Applications, Operations, Commodities, Information Management and Corporate Services. In addition, the Executive Office includes three other teams providing specialized services: Legal Services, Professional Leadership and Regulatory Services.

Senior Board Staff

Gaétan Caron	Chief Operating Officer
Judith Hanebury	General Counsel
Sandy Harrison	Business Leader, Applications
John McCarthy	Business Leader, Operations
Terrance Rochefort	Business Leader, Commodities
Byron Goodall	Business Leader, Information Management
Valerie Katarey	Business Leader, Corporate Services

Michel Mantha	Secretary of the Board
Bonnie Gray	Project Leader, Northern Preparedness
Glenn Booth	Professional Leader, Economics
Claudine Dutil-Berry	Acting Professional Leader, Environment
Joe Paviaglaniti	Acting Professional Leader, Engineering

Business Unit Responsibilities

Applications

The Applications Business Unit is responsible for processing and assessing most regulatory applications submitted under the NEB Act. These fall primarily under Parts III and IV of the NEB Act, corresponding to facilities and tolls and tariffs applications. It is also responsible for other matters such as the financial surveillance and financial audits of companies under the Board's jurisdiction and addressing landowner concerns.

Commodities

The Commodities Business Unit is responsible for energy industry and marketplace surveillance, including the outlook for the demand and supply of energy commodities in Canada, updating guidelines, and regulations relating to energy exports as prescribed by Part VI of the NEB Act. It is also responsible for assessing and processing applications for oil, natural gas and electricity exports, and for the construction and operation of international and interprovincial electric power lines.

Operations

The Operations Business Unit is accountable for safety and environmental matters pertaining to facilities under the NEB Act, the COGO Act and the CPR Act. It conducts safety and environmental inspections and audits, investigates incidents, monitors emergency response procedures, regulates the exploration, development and production of hydrocarbon resources in non-accord frontier lands, and develops regulations and guidelines with respect to the above.

Information Management

The Information Management Business Unit is responsible for developing and implementing an information management strategy for the Board and disseminating the information required by internal and external stakeholders. Its responsibilities include internal and external communications, library services, corporate records management, mail services, access to information, document production services, and Board-wide computer services.

Corporate Services

The Corporate Services Business Unit provides those services necessary to assist the Board in its management of human, materiel and financial resources. Its responsibilities include corporate policy and planning activities, materiel and facilities management, staffing, training, compensation and benefits, procurement, inventory control, physical security, and union/management activities.

Executive Office

The Executive Office is responsible for the Board's overall capability and readiness to meet strategic and operational requirements including legal advice for both regulatory and management purposes, maintaining and enhancing technical expertise within the Board in the economic, environmental and engineering fields, and hearing administration and regulatory support.

supplement viii

List of Abbreviations

Alliance	*Alliance Pipeline Ltd.*
AVC	assurance of voluntary compliance
BC Gas	BC Gas Utility Ltd.
BC Hydro	British Columbia Hydro and Power Authority
Board or NEB	National Energy Board
CAPP	Canadian Association of Petroleum Producers
Cartier	Cartier Pipeline and Company, Limited Partnership
CEAA	Canadian Environmental Assessment Agency
CEA Act	*Canadian Environmental Assessment Act*
COGO Act	*Canadian Oil and Gas Operations Act*
CSA	Canadian Standards Association
CSR	Comprehensive Study Report
EMA	Energy Market Assessment
Enbridge	Enbridge Pipelines Inc.
ERF	Electronic Regulatory Filing
ESRF	Environmental Studies Research Funds
FAQ	frequently asked question
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GFR	*Guidelines for Filing Requirements*
GSX	Georgia Strait Crossing Pipeline Limited
IPL	international power line
Line 9	Enbridge's crude oil pipeline from Montreal to Sarnia
M&NP	Maritimes and Northeast Pipeline Management Ltd.
Manitoba Hydro	Manitoba Hydro-Electric Board
MOU	Memorandum of Understanding
NB Power	New Brunswick Power Corporation
NEB or Board	National Energy Board
NEB Act	*National Energy Board Act*
NGL	natural gas liquids
NOVA	NOVA Gas Transmission Ltd.
OPEC	Organization of Petroleum Exporting Countries
OPR-99	*Onshore Pipeline Regulations, 1999*
PDF	Portable Document Format
Powerex	British Columbia Power Exchange Commission
RTO	regional transmission organization
SGML	Standard Generalized Markup Language
Sumas	Sumas Energy 2 Inc.
TMPL	Trans Mountain Pipeline Company Ltd.
TransCanada	TransCanada PipeLines Limited
TSB	Transportation Safety Board of Canada
Vector	Vector Pipeline Ltd.
WCSB	Western Canada Sedimentary Basin
Westcoast	Westcoast Energy Inc.
WTI	West Texas Intermediate

metric conversion table

The Board uses the International System of Units. The energy content of a 30-litre tank of gasoline is approximately one gigajoule. A petajoule is one million gigajoules. On average, Canada consumes about one petajoule of energy every 50 minutes for all uses (heat, light and transportation).

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factors

metre	=	3.28 feet
kilometre	=	0.62 mile
hectare	=	2.47 acres
cubic metre of oil	=	6.3 barrels
cubic metre of natural gas	=	35.3 cubic feet
gigajoule	=	0.95 thousand cubic feet of natural gas at 1 000 Btu per cubic foot or 0.165 barrels of oil, or 0.28 megawatt hours of electricity
gigajoule	=	10^9 joules
petajoule	=	10^{15} joules
gigawatt hour	=	10^3 kilowatt hours
terawatt hour	=	10^6 kilowatt hours

Susan Abuid Laurie Aitchison Jim Anderson Elizabeth Arden Lilly Armstrong Jann Atkinson Lawrence Ator
Jawed Aziz Terry Baker Rita Bargetzi Trena Barnes Christine Beauchemin Helen Benes Judy Bennett
Nancy Berard Brown Steve Berthelet Bill Bingham Karen Blank Marie Bleskan Glenn Booth Paul Bourgeois
Lori Ann Boychuk Barry Branston Diane Brenner Chantal Briand Darrin Britton Michelle Brosseau Cliff Brown
Steve Brown John Bulger Terri Burke Bette Burton Stephen Buszowski Mona Butler Kevin Campbell
Shannon Carignan Gaétan Caron Philip Cheung Michael Chow Angus Cockney Ken Colosimo Pat Cormier
Brad Cossette Sylvie Cousineau Vanessa Cozine Colette Craig Susan Criddle Cassandra Crippen Sharon Culp
Cecilia Cupido Jan Dane Jim Davidson Greg Davis Heather Davis Gord Daw Teresa De Grosbois Shawn DeForest
Fred Delientcourt Danielle Demers Debbie Desaulniers Leona Desmet Anita Dion Bharat Dixit Abby Dorval
Megan Douglas Nancy Dubois Sharon Duffy Karen Duckworth Donna Dunn Mavis Dunn Lynne Duquette
Claudine Dutil Berry Carmen Dybwad Mary Dylke Ingrid Ektvedt Julian Emanuel Deborah Emes Peter Enderwick
Wendy Ettinger Marcus Eyre Sandra Falconi Alison Farrand Christopher Finley
Rick Fisher Pamela Fiser David Forest Margery Fowke Jim Fox John Fox Yvonne Fry
Albert Fung Charlene Gaudet Feisal Gazio Scott Gedak Louise George Kevin Gerlo
Diana Ghikas Lillian Giardini Gurdeep Gill Preet Gill Melanie Gnyp Kevin Goble
Byron Goodall Duncan Grant Bonnie Gray Geraldine Green Susan Marie Greentree
Matt Groza Susan Gudgeon Pierre Guenard Sam Gurgis Emily Halliday

Guy Hamel Judith Hanebury Rowland Harrison Sandy Harrison
Sandra Harrower Michelle Haug Debbie Heckbert Paul Hess
Ross Hicks Stella Hiebert Gord Higginson Kevin Hill Minh Ho
Merle Hoffman Brent Hogue Sue Holdsworth Colleen Holt
Kym Hopper-Smith Jensen Hu Orlando Huang Andrew Hudson
Gloria Hughes Louise Iljevec Judy Inglis Sheena Jackson
Leo Jansen Franci Jeglic Audry Johnston Elizabeth Johnston
Jeanette Johnston Brian Kane Valerie Katarey Maureen Kearns
Lee Kelm Teresa Kennedy Brenda Kenny Janine Kessler
Rudi Klaubert Chris Knoechel Mike Knapp Josef Kopec John Korec
Johanne Kozak Tim Kucey Bryan Labbe Michele Labbe Louise
Solunges Lacasse Larry Ladell Anne Lafleche Nathalie Laprise
Kerry Lee Sharon Lee Robert LeMay Joe Lemee Nathan Len
Kent Lien Robin Lipton Denyse Longchamps Lynn Ludlow
Ken Luu Barry Lynch Louise Lynch Marnie MacGillivray

Larry Mackenzie Leanne Maeda Henry Mah Bruce Maher
Bob Mahnic Pat Mahon Tasneem Manji Michel Mantha
Wayne Marshall Sandra Martindale Cathy Martinello
Ken Massé Marcella Matzeit John McCarthy Nadia McCarthy
Jim McComiskey John McIsaac Claire McKinnon
Moira McKinnon Monika McPeake Margaret McQuirston
Shari Medford Loreto Meneses Jan Merta Margaret Merta
Geraldine Metcalfe Elke Meyer France Millette Ruth Mills Maureen Mitchell Tony Mitchell Bindu Modha
Bob Modray Caroline Moore Bruce Moores Jane Morales Carmen Morin Louis Morin Joyce Morrison
Karen Morton Carla Morton-Stowe Sylvia Mosseau Robert Mott Brian Nesbitt François Nguyen
Louise Niro James Obrigewitch Wendy Olan Karen Overli
Francine Poudrette Carol-Lynn Power Ricki Pratte
Daniella Pacifico Chantal Painchaud Rosemarie Palmiere
Elizabeth Quarshie Rima Raad Carolyn Ramsum
Lorna Patterson Ken Paulson Marc Pauzé Joe Paviglianiti
Karla Reesor Shirley Rehel Laura Richards Shane Richardson
Marina Pedersen Bernard Pelletier Steve Pierce Pat Pilon-
Chantal Robert Sherry Robinson Terry Rochefort
Rouleau Howard Plato Hans Pols Linda Postlewaite
Alex Ross Kent Rowden Mary Jane Sam Nurbanu Samji
Monica Santander Brenda Saretzky Jody Saunders
Mary Lou Scharf Peter Schnell Eugene Schoonen Earl Schultz
Dan Seaking Jason Selinger Don Semper Bill Seney
Candice Servais Michelle Shabits Ann Shalla Lori Ann Sharp
Jutta Shaw Henri Simoneau Chantale Simons Rudy Singer
Gail Singh Corina Smith Janet Soucy Patrick Sprague
Jennifer Stanier Brenda Stevens Jonathan Stewart
Brent Storey Susan Storey Catherine Taylor Terry Taylor
Jean Paul Théorêt Marc Thibaudeau Jane Thomas
Deborah Thompson Gerry Thompson Jean Paul Tourigny
Denis Tremblay Paul Trudel Rick Turner Lucie Vallieres
Chris van Egmond Laura Van Ham Mieke Vander Valk
Ken Vollman Dave Walker Patricia Walker Bill Wall
Shelley Watt Catherine Watson Bryan Williams
Sharon Wong Gary Woo David Young Tracy Young
Paul Yu Marian Yuzda Hanya Zacharko

Canada